TA 16

PSRO DATA QUALITY CONTROL MANUAL

JULY 1978

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

HEALTH CARE FINANCING ADMINISTRATION
HEALTH STANDARDS AND QUALITY BUREAU

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MEMORANDUM

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
HEALTH CARE FINANCING ADMINISTRATION
HEALTH STANDARDS AND QUALITY BUREAU
OFFICE OF PROFESSIONAL STANDARDS REVIEW ORGANIZATIONS

TO : Planning and Conditional PSROs; Statewide Councils; Regional PSRO Project Officers

DATE: JUL 3 1978

TECHNICAL ASSISTANCE
DOCUMENT NO. 16

FROM : Director

SUBJECT: PSRO Data Quality Control Manual

This technical assistance document is intended to assist PSROs in the development and implementation of a data quality control program.

Regardless of whether PSROs have developed new systems and procedures to collect data, or have adopted systems in place prior to PSRO program implementation to meet PSRO data needs, it is the PSRO's responsibility to assure the quality of the data. The PSRO's credibility and effectiveness depend upon the accuracy and reliability of the data which are used to produce reports and profiles. These reports and profiles are the basis for the decisions that are made that affect the management, organization and professional activities of the PSRO and must be based on high quality data.

As an aid to developing a data quality assurance program, the manual provides guidelines and procedures which PSROs can adopt, modifying where necessary, and integrate into their ongoing data systems and hospital monitoring programs. The manual also includes an excerpt from a forthcoming publication, "Quality Control of Coding and Abstracting," to be published by the Commission on Professional and Hospital Activities, and various approaches to data quality control in the form of Case Studies describing procedures developed by a number of PSROs.

As more experience is gained in the area of data quality control, we will refine the manual. We would be interested in receiving comments on your experience in using the materials and suggestions for improvement.

Michael J. Goran
Michael J. Goran, M.D.

Attachment

PSRO References:
- Provisional Policies for PSRO Data Routing and Processing, Section 3.1.4
- Federal Reports Manual, Chapters II and IV

PSRO DATA QUALITY
CONTROL MANUAL

Developed by Health Standards and Quality Bureau
Staff and Arthur Young and Company pursuant to
DHEW Contract No. 240-75-0128

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We wish to acknowledge the Executive Directors and staff of the PSROs, Thomas Powell, Executive Director of the Hospital Utilization Project and his staff, Arnold Spellman and Roland Loup of the Commission on Professional and Hospital Activities, and Dr. David Hodgson of Hodgson Associates, Inc. for their assistance in preparing the case studies.

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I. INTRODUCTION

I. INTRODUCTION

1. Concept of Data Quality

With implementation of the PSRO program nationally, significant volumes of PSRO data are being collected, processed and used to monitor and manage program activity at both the local and national levels. Because the success of the program depends to a great extent upon the effective use of these data, it is crucial that the data be of the highest quality possible.

High quality data have the following characteristics:

- Utility - Data serve little purpose if they do not have demonstrated utility to the ultimate users. PSRO data are useful for program monitoring and management activities at the local level, for medical management and review of the delivery of care at the national level, and for the development of a national data base for research. The PSRO must have a thorough understanding of the information that is required for these purposes and assure that the data are available in a form which meets the PSRO's requirements.
- Accuracy and Reliability - Profiles, reports, and Medical Care Evaluation (MCE) Study information generated from PSRO data will not be useful for either program or medical management purposes if they are inaccurate or unreliable. Decisions about employee performance, hospital delegation status, patterns of medical care, individual instances of questionable care, and numerous other issues can be made only on the basis of valid, consistent data known to meet established standards of quality.
- Completeness and Timeliness - Similarly, the completeness and timeliness of PSRO data impact directly on its quality. Few, if any, decisions can be made on the basis of incomplete data. Data which are several months old may not reflect the current operational status of the program, either administratively or medically, and decision making based on such data is awkward, at best. Further, when errors are detected in late data, the incentive to provide prompt and accurate corrections is substantially reduced.

2. Reliability of Hospital Discharge Information

The quality of data collected by PSROs has been and continues to be a major concern to all who must depend upon the information and reports generated by PSRO computer systems. Several studies have been conducted to determine the reliability of hospital discharge data and to determine characteristics in the hospital which may affect data quality. Two studies are briefly described herein because the results of these studies have influenced the concerns and emphasis of this manual.

2.1 Findings from Re-Abstracting Studies

The Uniform Hospital Discharge Data Demonstration (UHDDD), conducted in 1972 by the Health Services Foundation and Bio-Dynamics under contract to the Department of Health, Education, and Welfare, required the re-abstracting of a selected sample of medical records from volunteer hospitals. Results of this test, conducted at four sites, were combined with an analysis of PSRO-specific data elements collected during the PSRO Management Information System (PMIS) field test in 1976. Exhibit I-1 presents the detailed analysis, by item, of discrepancies classified by error type. The percentage of abstracts with discrepancies by item and test site are shown in Exhibit I-2.

Exhibit I-2 is particularly noteworthy; it indicates clearly that most errors occur in diagnostic coding across the sites. Underlying factors associated with high discrepancy in this item were:

- Not applying correct definition for principal diagnosis or lack of familiarity by hospital personnel with data definitions
- Abstracting from incomplete medical records
- Diagnoses ordering (incorrectly selecting the principal diagnosis)
- Coding errors
- Incorrect classification of diagnoses (this occurs when the terminology used by the physician cannot be matched with terminology in the code book)
- Two codes describing virtually identical conditions

Results of another major re-abstracting study completed in February 1977, by the Institute of Medicine, showed

> "...that information on hospital admission date, discharge date, patient's date of birth or age, sex and anticipated principal source of payment was highly reliable. However, for all principal diagnoses combined, when codes were compared to four digits, the original abstract and Institute of Medicine re-abstract agreed for only 65.2 percent of the records; for all procedures the level of agreement was 73.2 percent." 1/

1/ Institute of Medicine, Reliability of Hospital Discharge Abstracts (Washington, D.C.: National Academy of Sciences, February 1977), p. 47.

EXHIBIT I-1

ITEM DISCREPANCY CLASSIFICATION ANALYSIS (UHDDD TEST SITE)

ITEM	DISCREPANCY	SITE NO. 1	SITE NO. 2	SITE NO. 3	SITE NO. 4	ITEM TOTAL
PERSON I.D.	CLERICAL	2	1	8	–	11
DATE OF BIRTH	COMPLETENESS	3	1	4	–	
	CLERICAL	17	2	4	–	31
SEX	CLERICAL	6	6	4	15	31
RACE	CLASSIFICATION JUDGMENT	–	1	–	–	
	COMPLETENESS	1	–	–	–	
	CLERICAL	3	–	1	12	18
ZIP CODE	PROCEDURAL	–	–	–	12	
	CLERICAL	2	–	7	19	40
ADMISSION DATE	CLERICAL	5	1	–	4	10
ADMISSION HOUR	CLERICAL	34	9	157	187	387
DISCHARGE DATE	CLERICAL	12	1	1	–	14
ATTENDING PHYSICIAN	CLASSIFICATION JUDGMENT	–	–	3	–	
	PROCEDURAL	12	–	–	132	
	CLERICAL	7	3	6	9	172
OPERATING PHYSICIAN	CLASSIFICATION JUDGMENT	–	–	1	2	
	PROCEDURAL	–	–	–	–	
	DEPENDENT	8	1	7	221	
	CLERICAL	11	–	7	15	273
PRINCIPAL DIAGNOSIS	CLASSIFICATION JUDGMENT	19	11	8	9	
	CODING JUDGMENT	12	13	4	12	
	PROCEDURAL	17	16	33	1	
	COMPLETENESS	14	1	4	71	
	CLERICAL	26	30	37	36	374
OTHER DIAGNOSES	CLASSIFICATION JUDGMENT	55	3	–	6	
	CODING JUDGMENT	31	13	8	10	
	COMPLETENESS	97	14	19	227	
	DEPENDENT	50	17	48	29	
	CLERICAL	53	57	63	103	903
PRINCIPAL PROCEDURE	CLASSIFICATION JUDGMENT	9	1	10	13	
	CODING JUDGMENT	4	6	4	5	
	PROCEDURAL	5	–	2	215	
	COMPLETENESS	9	–	–	–	
	CLERICAL	27	7	27	38	382
OTHER PROCEDURES	CLASSIFICATION JUDGMENT	–	4	–	12	
	CODING JUDGMENT	5	1	–	1	
	COMPLETENESS	24	1	8	125	
	DEPENDENT	16	3	15	34	
	CLERICAL	38	2	38	19	346
PROCEDURES DATES	DEPENDENT	48	1	18	112	
	CLERICAL	122	–	31	9	341
PRINCIPAL SOURCE OF PAYMENT	CLASSIFICATION JUDGMENT	–	2	1	11	
	CLERICAL	5	24	6	9	58
DISPOSITION OF PATIENT	CLASSIFICATION	–	1	2	33	
	CLERICAL	8	2	6	5	57
	TOTAL DISCREPANCIES	817	256	602	1,773	3,448

EXHIBIT I-2

PERCENTAGE OF ABSTRACTS WITH ITEM DISCREPANCIES

TEST SITE

ITEM	NO. 1	NO. 2	NO. 3	NO. 4	ALL SITES
PERSON I.D.	0.3	0.1	1.2	–	0.3
DATE OF BIRTH	2.9	0.4	1.2	–	10.0
SEX	0.9	0.8	0.6	1.2	10.0
RACE	0.6	0.1	0.1	1.2	0.6
ZIP CODE	0.3	–	1.1	2.6	1.2
ADMISSION DATE	0.7	0.1	–	0.3	0.3
ADMISSION HOUR	5.0	1.3	24.0	15.5	11.9
DISCHARGE DATE	1.8	0.1	0.1	–	0.4
ATTENDING PHYSICIAN	2.8	0.4	1.4	11.7	5.3
OPERATING PHYSICIAN	2.8	0.1	2.3	19.7	8.4
PRINCIPAL DIAGNOSIS	12.9	10.0	13.1	10.7	11.5
OTHER DIAGNOSES	41.8	14.6	21.2	31.0	27.7
PRINCIPAL PROCEDURE	7.9	2.0	6.6	22.4	11.7
OTHER PROCEDURES	12.1	1.5	9.3	15.8	10.6
PROCEDURES DATES	24.9	0.1	7.5	10.0	10.5
PRINCIPAL SOURCE OF PAYMENT	0.7	3.7	1.1	1.7	1.8
DISPOSITION OF PATIENT	1.2	0.4	1.2	3.1	1.8

Exhibit I-3, excerpted from the IOM study, shows reasons for discrepancies between the original abstract and IOM re-abstract, when the IOM re-abstract was determined to be correct and when it could not be determined which data source was correct.

The report listed several factors for the decreased reliability of these data items. Among these were:

- Some diagnoses are more difficult to code accurately than others; for example, chronic ischemic heart disease was only 30.2 percent accurate while hypertrophy of the tonsils and adenoids 97.0 percent accurate

- Erroneous selection of principal diagnosis

- Thoroughness with which the medical record was reviewed prior to assigning code numbers.

Thus the IOM study and the UHDDD results seem to be in basic agreement on the problems of accuracy with respect to diagnoses.

Other research in this area has been conducted. A study conducted by Henrickson and Myers noted a "significant error rate" in recording data and recommended improvements in hospital practices and training. Studies conducted by the Cooperative Health Information Center in Vermont and the Commission on Professional and Hospital Activities have noted the importance of training and careful screening of completed abstracts.

2.2 Recommendations from Re-Abstracting Studies

Following is a brief listing of IOM recommendations which are pertinent to PSRO data systems and which significantly influenced the emphasis of this data quality control manual.

- Hospital discharge data should be used cautiously; i.e., the degree of accuracy required depends upon use of data.

- "Periodic assessments of the reliability of PSRO data should be included in the information reporting requirements of the PSRO Management Information System." 2/

- "Physicians should be encouraged to use more care in completing the medical record, to clearly indicate the diagnosis responsible for hospital admission...." 3/

2/ Institute of Medicine, p. 51.
3/ Ibid

EXHIBIT I-3

Reasons for Discrepancy by Principal Diagnosis and Correct Source of Data, Based on Four-Digit Comparisons (weighted percent) **

	Correct data source					
	IOM re-abstract			Indeterminate		
Principal diagnosis	Ordering	Coding	Unweighted number of abstracts	Ordering	Coding	Unweighted number of abstracts
Cerebro-vascular disease	39.7%	60.3%	44	68.6%	31.4%	12
Chronic ischemic heart disease	82.3	17.8	126	93.0	7.0	30
*Acute myocardial infarction	12.1	87.4	49	42.9	57.1	8
Subacute ischemic heart disease	19.4	80.7	8	53.6	46.4	5
Diabetes	71.0	29.1	65	70.8	29.2	15
Carcinoma of the breast	24.5	75.4	48	-	-	-
End stage renal disease	29.7	70.2	44	45.5	54.6	14
*Cholelithiasis/ Cholecystitis	51.7	44.9	42	79.6	20.4	21
Hernia without obstruction	17.7	82.3	21	100.0	-	2
Hernia with obstruction	-	100.0	7	-	-	-
Delivery	-	99.9	13	12.2	87.8	9
Hypertrophy of tonsils and adenoids	60.0	40.0	6	100.0	-	2
Acute tonsillitis	25.0	75.0	5	100.0	-	1
Fracture of neck of femur	6.6	93.4	38	100.0	-	1
Unspecified fracture	-	100.0	11	-	-	-
Displacement of intervertebral disc	9.1	90.0	24	75.0	25.0	9
Low back pain	33.3	66.6	12	100.0	-	2
Cataract	-	100.0	14	33.3	66.7	2
Neuroses	51.5	48.4	18	66.7	33.3	8
Personality disorders	-	-	3	-	-	-

*The total number of cases where the re-abstract is correct is slightly less than 100 percent because for a few abstracts the field team neglected to determine a reason for discrepancy.

** Institute of Medicine, p.35.

- Total review of the medical record should be done prior to abstracting information on diagnoses and procedures.

- Extensive training programs for hospital personnel, plus estimates of error rates in hospital data should be provided to those collecting PSRO data.

3. Purpose of Manual

Whether PSROs have developed new systems and procedures to collect and process data or have adapted systems in place prior to PSRO program implementation to meet PSRO review and data reporting requirements, it is the PSRO's responsibility to assure the quality of the data. In accordance with the Provisional Policies for PSRO Data Routing and Processing, "the PSRO, data processing organization, and delegated hospitals must agree to the establishment of in-house procedures for controlling the quality of data collected." (3.1.4)

In light of the deficiencies in Uniform Hospital Discharge Data Set (UHDDS) collection found in the re-abstracting studies and PSRO responsibility to establish procedures to assure and maintain data accuracy and reliability in the collection and processing of high quality PSRO data (the UHDDS plus the P-Specific and optional items), it is the purpose of this manual to assist PSROs by providing guidelines for developing a data quality control program.

The manual includes:

- A data quality checklist and suggested procedures from which PSROs can develop ongoing operational controls and audit procedures for their individual PSRO environments.

- Various approaches for monitoring the quality of data collected and processed through the PSRO's data system, and for training and retraining personnel in a positive, helpful manner. These are attached in the appendices in the form of Case Studies describing the data quality control procedures developed by several PSROs. Please note these are illustrations of data quality control systems, but not every aspect of the systems are appropriate or even advisable for another PSRO. In reviewing the case studies, it is hoped that each PSRO will be able to adopt, (modifying where necessary), those procedures and forms which are appropriate to its system and environment.

- An excerpt from a forthcoming publication, "Quality Control of Coding and Abstracting" to be published by the Commission on Professional and Hospital Activities (CPHA), is included as a method of data quality monitoring (Appendix A).

4. Functional Areas of a PSRO Data System

Although it is possible to categorize the activities comprising a generic or typical PSRO data system in many ways, for purposes of this manual four major functional categories have been identified, as follows:

- Data abstracting and recording

- Forms flow control and data transfer

- Data entry and edit

- Data processing and output (report) analysis

These four functional areas consist of relatively discrete activities within the data collection and processing system established for PSRO-required data on hospital discharges, as illustrated in Exhibit I-4 on the following page. In this flow chart, three functional areas are depicted as separate activities while the fourth activity, Forms Flow Control and Data Transfer, applies to each aspect of the other three major activities. The number in parentheses under each activity references a functional area and activity with the related quality control procedures in the PSRO Data Quality Control Checklist in Chapter II. Each of the four functional areas is described in more detail below.

Data Abstracting and Recording

The data abstracting and recording function generally occurs within the hospital. It usually involves the review coordinator and the medical records department, and in some cases also involves personnel at the PSRO. Specific activities which usually occur within this function include:

- Identification of patients to be reviewed

- Documentation of concurrent review information, including extension denials, physician reviews, number of days certified, reason codes, etc.

- Documentation of relevant medical information, dates, and other essential identifying information on the review coordinator's worksheet and/or in the medical record

- Abstraction of the PHDDS or PSRO-required information onto the abstract form required by the PSRO to be completed for each Title V, XVIII, or XIX patient

- Identification of the principal and other diagnoses and principal and other significant procedures

- Coding the procedure(s) and diagnoses in H-ICDA-2 or ICDA-8 on the abstract (this may also occur at the PSRO)

- Certification of the patient's bill.

In short, this function involves identifying the patient, documenting the case, and abstracting and recording the data for PSRO purposes.

EXHIBIT I-4

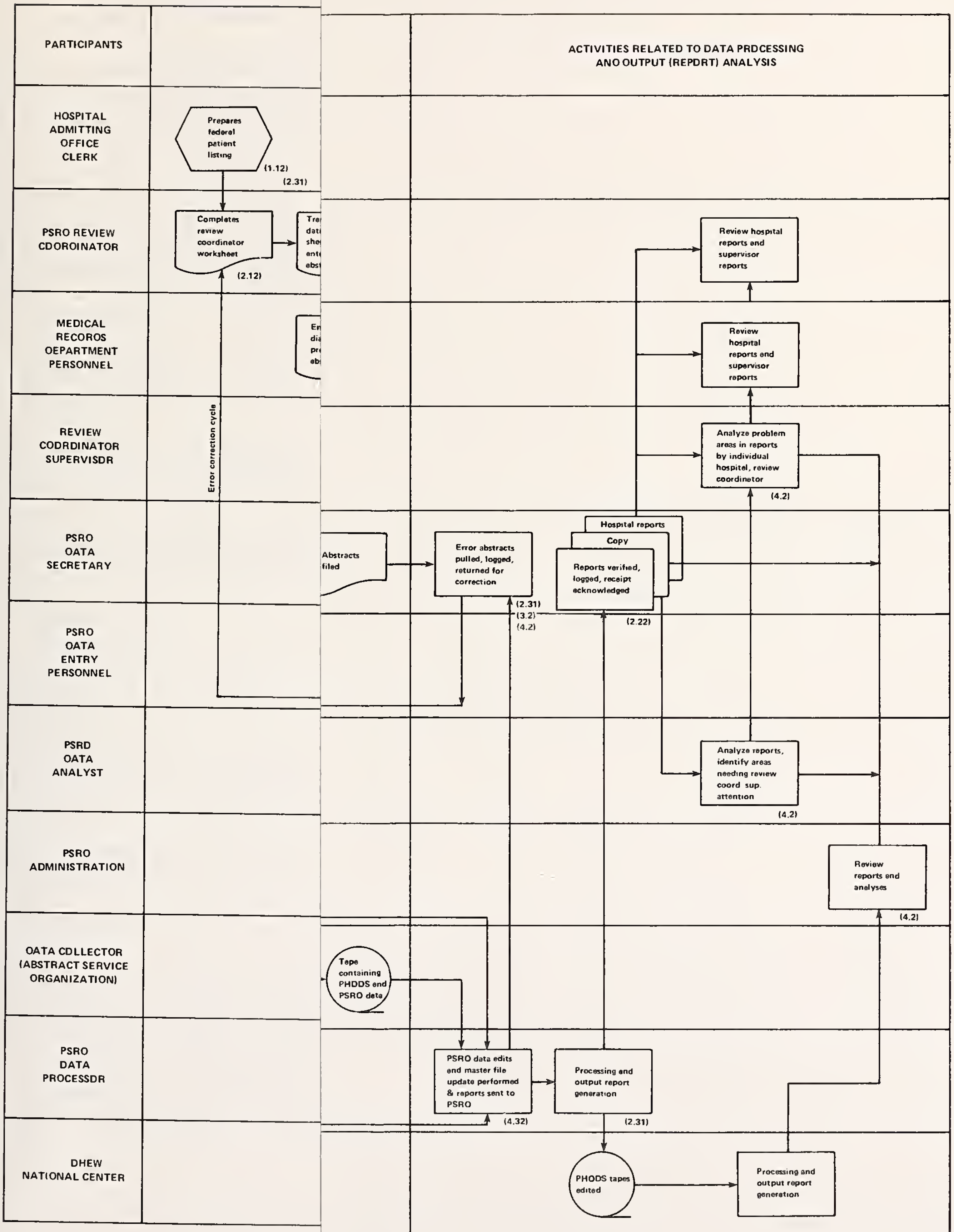
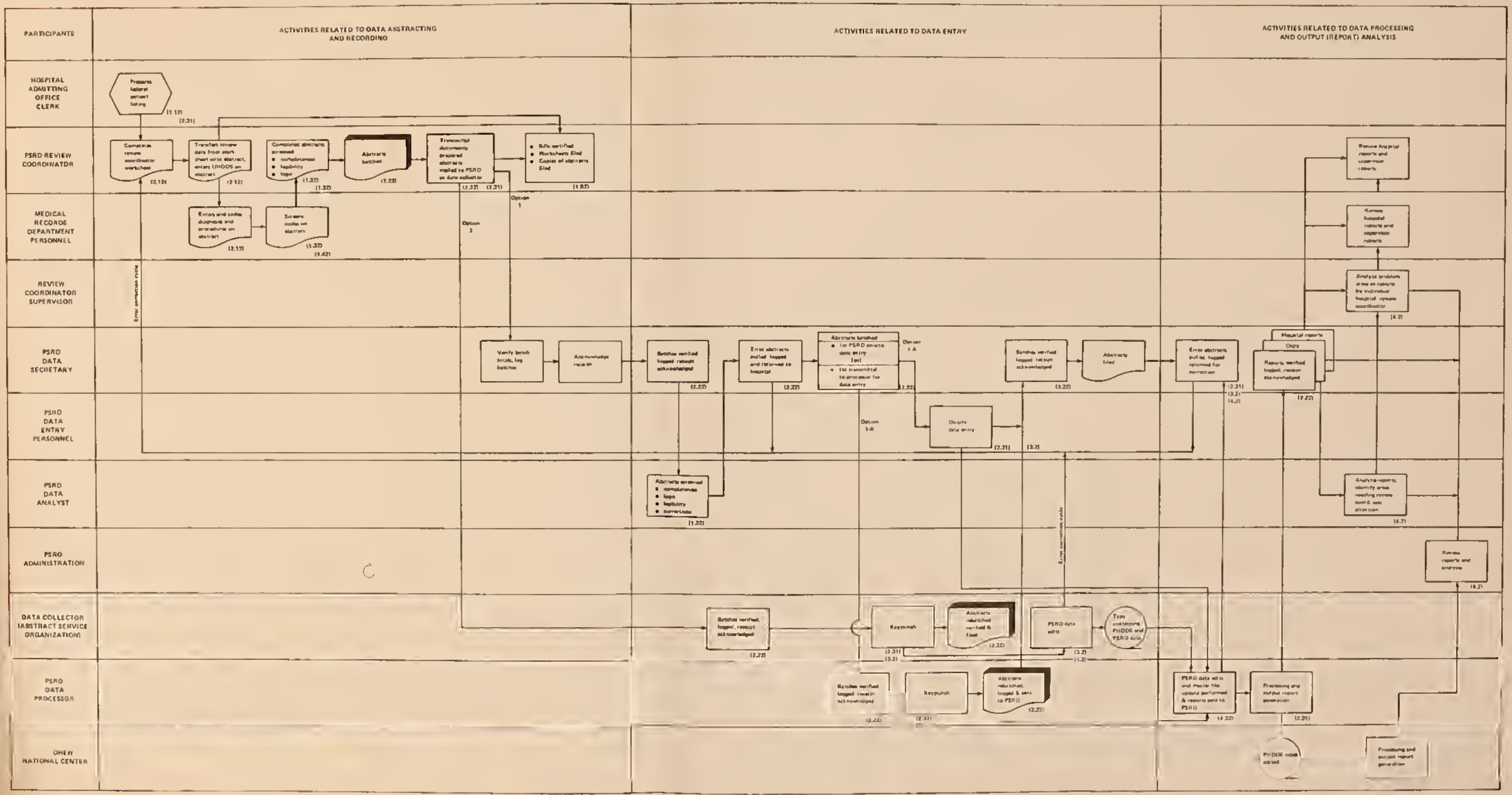

PARTICIPANTS
ACTIVITIES RELATED TO DATA PROCESSING AND OUTPUT (REPORT) ANALYSIS
HOSPITAL ADMITTING OFFICE CLERK
PSRO REVIEW COORDINATOR
MEDICAL RECORDS DEPARTMENT PERSONNEL
REVIEW COORDINATOR SUPERVISOR
PSRO DATA SECRETARY
PSRO DATA ENTRY PERSONNEL
PSRO DATA ANALYST
PSRO ADMINISTRATION
DATA COLLECTOR (ABSTRACT SERVICE ORGANIZATION)
PSRO DATA PROCESSOR
DHEW NATIONAL CENTER
Prepares federal patient listing
(1.12)
(2.31)
Completes review coordinator worksheet
(2.12)
Error correction cycle
Review hospital reports and supervisor reports
Review hospital reports and supervisor reports
Analyze problem areas in reports by individual hospital, review coordinator
(4.2)
Abstracts filed
Error abstracts pulled, logged, returned for correction
(2.31)
(3.2)
(4.2)
Hospital reports
Copy
Reports verified, logged, receipt acknowledged
(2.22)
Analyze reports, identify areas needing review coord sup. attention
(4.2)
Review reports and analyses
(4.2)
Tape containing PHDDS and PSRO data
PSRO data edits and master file update performed & reports sent to PSRO
(4.32)
Processing and output report generation
(2.31)
PHDDS tapes edited
Processing and output report generation

EXHIBIT I-4

PSRO DATA SYSTEM INDICATING ON-GOING DATA QUALITY CONTROL PROCEDURES


PARTICIPANTS
ACTIVITIES RELATED TO DATA ABSTRACTING AND RECORDING
ACTIVITIES RELATED TO DATA ENTRY
ACTIVITIES RELATED TO DATA PROCESSING AND OUTPUT (REPORT) ANALYSIS
HOSPITAL ADMITTING OFFICE CLERK
PSRO REVIEW COORDINATOR
MEDICAL RECORDS DEPARTMENT PERSONNEL
REVIEW COORDINATOR SUPERVISOR
PSRO DATA SECRETARY
PSRO DATA ENTRY PERSONNEL
PSRO DATA ANALYST
PSRO ADMINISTRATION
DATA COLLECTOR (ABSTRACT SERVICE ORGANIZATION)
PSRO DATA PROCESSOR
DHEW NATIONAL CENTER
Prepares labeled patient listing
(1.17)
(2.31)
Completes review coordinator worksheet
(2.13)
Transfer review data from work sheet onto abstract, enters UHDDS on abstract
(2.12)
Completed abstracts reviewed
• completeness
• legibility
• logic
(1.22)
(1.22)
Abstracts batched
(2.23)
Transmittal documents prepared abstracts mailed to PSRO or data collector
(2.22)
(2.31)
• Bills certified
• Worksheets filed
• Copies of abstracts filed
(1.93)
Enters and codes diagnoses and procedures on abstract
(2.12)
Screens codes on abstract
(1.22)
(1.42)
Option 1
Option 2
Error correction cycle
Verify batch totals, log batches
Acknowledge receipt
Batches verified logged receipt acknowledged
(2.22)
Error abstracts pulled logged and returned to hospital
(2.22)
Abstracts batched
• for PSRO on-site data entry (a)
• (b) transmitted to processor for data entry
(2.22)
Option 1-A
Option 1-B
On-site data entry
(2.31)
(3.2)
Batches verified logged receipt acknowledged
(3.22)
Abstracts filed
Abstracts reviewed
• completeness
• logic
• legibility
• correctness
(1.22)
Error correction cycle
Error abstracts pulled, logged returned for correction
(2.31)
(3.2)
(4.2)
Hospital reports
Data
Reports verified logged, receipt acknowledged
(2.22)
Review hospital reports and supervisor reports
Review hospital reports and supervisor reports
Analyze problem areas in reports by individual hospital review coordinator
(4.2)
Analyze reports, identify areas needing review coord. attention
(4.2)
Review reports and analyses
(4.2)
Batches verified, logged, receipt acknowledged
(2.22)
Keypunch
(2.31)
(3.2)
Abstracts submitted verified & filed
(2.22)
PSRO data edits
(3.2)
(4.2)
Tape containing PHDDS and PSRO data
Batches verified logged receipt acknowledged
(2.22)
Keypunch
(2.31)
Abstracts submitted, logged & sent to PSRO
(2.22)
PSRO data edits and master file update performed & reports sent to PSRO
(4.32)
Processing and output report generation
(2.31)
PHDDS input edited
Processing and output report generation

FLOW CHART NOTE: Two options have been presented on the flow chart. In Option 1 the hospital sends abstracts to the PSRO. In Option 2 abstracts are sent to the abstract service organization. There are other options, such as the combination of Options 1 and 2, which are not depicted here. Individual activities may vary as follows:

- The admission's office may use another method to notify the review coordinator other than patient listings
- The PSRO Review Coordinator function may be delegated or non-delegated
- The review coordinator may not perform any screening activity. In some large hospitals, only a review coordinator supervisor may perform this activity.

Forms Flow Control and Data Transfer

Forms flow and data transfer activities occur whenever information, which has been recorded, processed, or otherwise handled by one individual or entity, is passed to another. Forms flow occurs when the data is recorded on a form, such as an abstract or a review coordinator's worksheet. Data transfer refers to the movement of data other than in hard copy form, such as transmittal of the data to the processor from the PSRO via cathode ray tube (CRT). Control of each of these activities is an integral part of the data system and involves:

- Controlling all documentation and input forms required for or generated as a result of the hospital stay, such as concurrent review or billing certification.
- Controlling all data transfer to and from the: hospital, collector, processor, and PSRO.

Data control must be maintained regardless of data format which may include:

- Hard copy input (abstracts) and output (reports or listings)
- Magnetic tape input and output
- Hard copy and tape combinations for input and output
- Transmission of data from one place to another via CRT (telephone lines)
- Other data entry media, such as diskettes, punched cards, etc.

The forms flow control and data transfer function are important for quality control, because errors or problems can be introduced into data at this stage; abstracts, records or data items may be lost or never reported at all; data contents may be transposed or changed inadvertently during transmission; or incomplete processing may allow the entry of errors into the PHDDS data base.

FLOW CHART NOTE: The functional category relating to forms flow control and data transfer is found within each major activity of the flow chart (Exhibit I-4). Procedures for control of data transfer are basically the same wherever the data are located; i.e., logging, batching, verifying the sending and receiving of information.

Data Entry and Editing

Data entry and editing functions involve the process of keying or otherwise entering (such as use of an optical scanner) the PHDDS data into the computer for processing; the function may be performed at the hospital, at the PSRO, by the collector, or by the processor. Editing includes the systematic checking of the entered PHDDS records according to a predetermined series of standards by the computer either during or after data entry.

The editing portion of this function may require that the forms flow control and data transfer function again become relevant if hard copy error lists require the preparation and transfer of corrected abstracts. If an interactive CRT is the data entry method used, much editing occurs on-line while the data are being entered, thereby decreasing greatly the necessity for hard copy correction abstracts.

FLOW CHART NOTE: Data entry activities are performed by one or more of the following participants: the PSRO data entry personnel, an abstract service organization or the PSRO data processor. Editing performed by the PSRO or abstract service organization becomes a part of data entry and editing as opposed to final editing performed by the processor. Once again, two portions are shown for data entry: (1) on-site, or (2) by the data processor. Pre-screening can also be performed by any of these participants. All participants are involved in data control and transfer.

Computer Data Processing and Output Analysis

The computer data processing function occurs following entry, editing and correcting of each record. It is almost exclusively carried out by the processor and involves:

- Development of files or a data base for each PSRO containing PHDDS and optional items collected by the PSRO

- Routine updating of the data base as more information is received and corrected (usually on a monthly basis)

- Production of hard copy reports for the PSRO in accordance with the terms of the contract between the PSRO and the processor (and in some instances, preparation of the PSRO Review Activity Summary for the Health Standards and Quality Bureau (HSQB)

- Preparation of the PHDDS tape for HSQB on a quarterly basis

Also included within this functional area are the review and analysis of the PSRO's reports and the determination of the types and causes of error which are in the data (identified as a result of studying the reports).

This last function provides the basis for the quality control mechanisms which are to be applied during the four functional phases of the PSRO data system. The analysis of problems -- techniques which are summarized in the following section of this chapter -- is followed by development of action plans for correcting and monitoring the process to assure data quality.

The review coordinator supervisor is a PSRO employee who oversees the concurrent review process in all PSRO hospitals. This person would probably be responsible for implementation of ongoing data quality controls based upon reports from the data analyst.

5. Application of Data Quality Control Procedures

In controlling data quality, two types of procedures are needed to assure that problems are systematically identified and addressed:

- Operational controls, which become part of ongoing, daily operations

- Periodic audit controls to identify data problems.

These types of control procedures differ in the frequency with which they are performed and in the techniques used. The two are briefly described below.

Operational Controls

Operational controls are ongoing procedures designed to assure and monitor data quality as a part of the daily functional activities comprising the PSRO data system.

Responsibility for performing operational controls is shared among the many individuals performing the various PSRO tasks and activities. Included among these persons are:

- PSRO staff personnel, including coders, data entry personnel, reports analysts, etc.

- Review coordinators in delegated and non-delegated hospitals

- Hospital medical records, admitting office, and billing office personnel

- Collector personnel, (i.e., an abstract service organization) including mail clerks, data entry personnel, computer personnel, etc.

- Processor personnel in roles similar to those for the collector.

When operational controls are needed, and the exact procedures for their conduct, including frequency as well as technique, are defined, the point in the data system at which they should be conducted and the individual to perform them must be determined. Among the considerations in deciding upon these are the attitudes, capabilities, and current operating procedures of the relevent organizations involved, and the design of the PSRO's data system.

For example, screening hard copy abstracts for omission in required data fields prior to data entry may be performed at a number of points in the PSRO data system:

- Within the hospital, prior to sending the abstracts to the collector or to the PSRO

- By the data collector prior to data entry

- By the PSRO prior to sending the abstracts to the collector or processor

- By the PSRO prior to data entry

- By the processor prior to data entry by a combination of the above.

Audit Procedures

Audit procedures are periodic activities and tests conducted by the PSRO to review the effectiveness of the operational controls currently being applied and to identify additional controls needed to assure data quality. In some cases, audit procedures may be successfully combined with hospital assessment and monitoring activities which occur periodically. This combination can be particularly effective for re-abstracting medical records.

Audit procedures are the responsibility of the PSRO. PSRO personnel will determine the type and frequency of the audits needed and may, in some instances, retain consultants or experts for assistance in particular technical areas (for example, in recording diagnoses and procedures).

The frequency with which audits are performed will depend upon several factors, such as the amount of time required to perform the audit, the past performance of hospitals, and the results of the analysis of output reports prepared by the processor for the PSRO.

6. Key Considerations of a Data Quality Control Program

In designing and implementing a data quality control program, certain key factors which must be considered by the PSRO are:

- The program should continuously monitor data quality
- The program should emphasize identification of patterns of errors rather than single, random errors occurring sporadically
- The program developed should actively involve the hospitals in the data quality control process
- Written procedures should be developed which are understandable, straightforward, and flexible in operation. These should be distributed to all PSRO and hospital personnel involved in data activities
- The program should be oriented toward the PHDDS and locally defined optional items related to the concurrent review process and should provide clear definitions for all of these data elements
- It should be possible to implement the program with a minimum of technical expertise in data processing and coding
- It should be possible to operate the program with available staff resources and time. Data quality control functions should be integrated with other PSRO monitoring activities

In addition, the following factors are necessary for any credible quality control program:

- The PSRO must have a thorough understanding of data procedures and activities for each of the hospitals in its area regardless of the delegation status of those hospitals, and
- The PSRO must have personnel who have been trained in each quality control function

- The PSRO should develop minimum standards for supporting documentation, data accuracy, and data timeliness for both the review process (worksheets, abstracts) and for the flow of PSRO data (logs, batch control documentation). The hospitals should be apprised of the standards against which their performance will be judged. Review of hospital performance in these areas should be integrated with the PSRO's other monitoring activities if possible.

- PSROs should actively assist delegated hospitals in the development of internal data quality control procedures, which the delegated hospital is required to establish (PSRO Data Routing and Processing Policy Number 3.1.4). PSROs may also wish to consider the presence of an effective data quality control system as a delegation criterion.

- The PSRO should establish minimum standards for education and/or training for all persons who will be abstracting and/or coding PSRO data. The PSRO may also wish to establish this as a delegation criterion. Such training should be made available often by the PSRO from qualified instructors.

CHAPTER II

ONGOING OPERATIONAL DATA QUALITY CONTROL PROCEDURES

II. ONGOING OPERATIONAL DATA QUALITY CONTROL PROCEDURES

This chapter discusses ongoing operational data quality control procedures and provides, in the form of a chart, a checklist for PSRO data quality control from which the PSRO should be able to verify the integrity of its data system, identify potential sources of error and problem areas and formulate ongoing data quality control procedures most appropriate to its operational data system and environment.

Data Quality Control Checklist

The following data quality control checklist is structured in terms of the four functional areas described previously:

1. Data abstracting and recording

2. Forms flow control and data transfer

3. Data entry and editing

4. Data processing and output (report) analysis

These areas are further divided into sub-functions. The PSRO should idenfity those functional components appropriate to its particular data system and use the related material to design and implement a comprehensive data quality control program or refine an existing program.

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.) Data Abstracting (1.1) Patient Identification	. Is there a system within the hospital to identify patients to be reviewed? . Is there an excessive amount of retrospective review occurring? . How does the hospital and/or PSRO verify that an abstract has been prepared for every patient subject to review?	. Lack of an effective system or clear procedures in the hospital for identifying patients to be reviewed. . Retrospective review and abstract completion which adversely affect data quality. . Lack of a system to verify that all Federal patients are being reviewed.	1. Enforce more stringent patient identification requirements in the admissions office to avoid any undue delays in notification to review personnel. 2. Use an independent data source such as daily admission list, daily census of patients in hospital, or billing list, to verify all Federal patients are being reviewed. 3. Use a log with the patient's date of admission, date coordinator was notified, and date review was begun (see Exhibit II-1). This will provide an indication of the timeliness of admission notification and assure that abstracts for all Federal patients are completed and sent to the PSRO. The number of retrospective reviews performed monthly will indicate the effectiveness of the patient identification process. Many hospitals treating a high percentage of Titled patients perform 100% review on all patients to avoid doing retrospective reviews.
(1.2) Recording PSRO data on input form	. If the worksheet and the input form are not the same document, are there clear instructions for transferring information from one to the other? . Is the worksheet designed to relate to the input form?	. Clerical; mistakes due to carelessness, transposition of numbers, omissions, failure to right or left justify fields, etc. . Judgmental; person must make an independent decision of what the correct answer might be.	1. Screening Institute screening procedures to be performed by a person other than the individual who completed the input form. Include checks for: Completeness (errors of omission)

EXHIBIT II-1

DAILY LOG

HOSPITAL ________________

PERIOD ________ TO ________

TITLE ________

PAGE ________

PATIENT ID	ADMISSION DATE	DATE COORDINATOR NOTIFIED	DATE REVIEW BEGUN	PT. DISCH. DATE	DATE BILL CERT.	DATE ABST. COMPL.	DATE ABST. SENT	# RETRO. REV.	NOTES

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.2) Recording PSRO data on input form (continued)	. Are there clear written instructions for completing the worksheet? Input form? . Are hospital manuals up-to-date and clearly understood?	. Procedural; errors caused by routine and systematic misuse of review or data recording procedures or misunderstanding of the items in question.	Legibility Left or right field justification Proper use of alpha and numeric codes
	. Does the abstract contain all required data elements? . Are all hospitals completing the abstract using the same definitions for the data items, and are those definitions, the definitions specified for Federal Reportings Requirements in the Federal Reports Manual?		Accuracy of data fields needed to identify documents for retrieval from data base. Usually, these are: . Hospital number . Record number (chart number) . Patient birthdate . Coordinator identification number . Patient identification (name, Federal program identification number or Social Security number).
			Arithmetic and logic verifications: . Verify addition of number of days certified and that all procedure dates and dates of review fall between admission and discharge dates . Verify reasonableness of dates . Check diagnoses for age edits if computer does not do this. Example: A diagnosis and/or procedure for newborns would require a very recent birthdate. Elements to be screened should include: . Elements which cannot be edited by computer (criteria must be developed to enable manual screening)

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.2) Recording PSRO data on input form (continued)			. Elements needed to identify and retrieve data from the computer . Elements edited by computer. It might occur that due to time delays (turnaround times) in abstract error corrections, manual screening of all abstracts may be indicated.
			2. Screening Template Can be used to check presence or absence of required or key fields. One of these can be made by cutting out the data fields of an abstract with an exacto knife; notes regarding field completion requirements can be made on the abstract (right and left justify; dependent fields, alpha-numeric, etc.) and the whole abstract enclosed by a plastic cover.
	. Are the data edited by the collector and processor? . Are the PHDDS tapes passing the minimum edits required by Transmittal 28, dated January 9, 1976, Transmittal 50, dated August 24, 1977 and any changes issued thereafter?	. Insufficient or incorrect routines at the collector or processor.	3. Responsibility for Screening Should Occur At: . The hospital level for items such as physician number, particularly if these are assigned by the hospital, to verify completeness of the fields and validity of the entries . The hospital level for completion of abstract fields, logic relationships among data elements, clarity of handwriting and field entries, etc. . The PSRO level for the same items and relationships as above, and others if hospital does not perform screening . The collector and processor, who must edit all abstracts or other input received.

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.2) Recording PSRO date on input form (continued)	. Does the memorandum of understanding between the PSRO and those hospitals using an abstract service to provide the required data specify the hospital's responsibility to screen data submitted to the service?	High rate of abstracts returned for correction	In those hospitals using an abstract service, manual screens of data submitted to the collector should be required in the Memorandum of Understanding with the PSRO. Abstracts which must be returned to the hospital for correction add additional time to the PSRO's data collection, routing, and processing of information. Furthermore, return of data for correction increases costs, and corrected data often may not be reliable due to employee inability to remember after a time lapse. 4. Cost Benefits to be Considered . Manual screen should be a relatively brief, superficial screen once hospitals are operating at a high level of accuracy . Additional edits which can be programmed into the computer should be economically feasible. Additional computer costs for edits should be measured against amount of time it takes to do manual screen. Generally, PSROs with large discharge volumes will have greater capability to produce sophisticated computer edits.
	. Are abstracts from newly delegated hospitals carefully screened?		5. Initial Screening A complete and careful screen of all abstracts from a newly delegated hospital should be performed by all PSROs prior to data entry. Errors which are found can be evaluated and corrected by the review coordinator supervisor and hospital personnel together. Once the hospital has been made aware of the areas in which errors are occurring and understands all

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.2) Recording PSRO date on input form (continued)			of the procedures completely, the hospital should not continue to make the same errors. Errors should decrease steadily until 100% complete screening on every abstract may no longer be necessary. Such a procedure with newly delegated hospitals saves time compared to the time spent correcting a multitude of errors after data processing has taken place. Sample screening guidelines may include those shown in the following exhibit (Exhibit II-2).
	. Are there written guidelines and criteria for ongoing manual screening of abstracts by PSRO and hospital personnel?	. Insufficient written instructions for ongoing screening procedures and follow-up to assure correction of deficiencies	6. Focused Screening . Focused screening emphasizes screening of the most significant data fields and involves a preliminary analysis of data submitted by individual hospitals or review coordinators. The purpose of this analysis, which would be conducted by PSRO personnel, is to reveal systematic errors in abstracting and recording. All abstracts from a hospital with many of these errors would be screened specifically for these errors until improvement in quality occurred. . Preliminary analysis includes review of error edit reports, error abstracts (or log of abstract errors). . Error field reports such as the one in Exhibit II-3 showing the number of errors occurring by field, the actual error made, and the coordinator and hospital making the errors would be helpful in determining the focus screening should take. Such analysis might be conducted for all abstracts until an acceptable error rate is achieved, and for random batches thereafter.

EXHIBIT II-2

SAMPLE SCREENING GUIDELINES

DATA ELEMENT	CRITERIA	NOTES
Hospital No.	Field must be complete Valid No. Each hospital has unique No. A batch of input forms from one hospital should contain only one hospital number.	. Hospital can verify. . PSRO can check this number when abstracts are received. . Computer can audit for valid hospital number for each batch.
Record No.	Valid No. (Should screen for format and possibly logical number assignment)	. Hospital screen for format of number. This field has a high accuracy level because it is a highly used data element in the hospital.
Physician Numbers	Valid No. Screen for correct format. License Nos. if used should fall within set numbers. i.e., Low numbers would be deceased physicians. High nos. not yet assigned.	. Hospital screen particularly assigns unique numbers. If license number is used, hospital, PSRO, and processor can verify that numbers fall within certain parameters and take a certain format (i.e., all numerical) Check with State Licensing Board for parameters for numbers.
Review Coordinator Number	Must be valid. Hospital may have one or more numbers. Unique numbers for each hospital.	. Hospital can screen quickly for this. PSRO would take more time to screen. Computer can audit: certain numbers for each hospital.
Patient Identification	Must be valid code. Social Security Nos. have only 9 numbers and no more. Medicaid and Medicare Nos. have a set format which can be screened quickly.	. Hospital screen test, particularly if Patient Chart Number is used instead of Social Security Number.

EXHIBIT II-3

ERROR FIELD REPORT

Hospital I.D.#: ________
Coordinator I.D.#: ________
Batch #: ________
Batch Date: ________

Total # Of Abstracts ________
Total # of Discrepancies ________
% of Abstracts with discrepancies ________

ITEM	NO. OF ERRORS	MOST FREQUENT OCCURING ERROR TYPES	CHECK MOST FREQUENT ERRORS
PERSON I.D.			
DATE OF BIRTH			
SEX			
RACE			
ZIP CODE			
ADMISSION DATE			
ADMISSION HOUR			
DISCHARGE DATE			
ATTENDING PHYSICIAN			
OPERATING PHYSICIAN			
PRINCIPAL DIAGNOSIS			
OTHER DIAGNOSES			
PRINCIPAL PROCEDURE			
OTHER PROCEDURES			
PROCEDURE DATES			
PRINCIPAL SOURCE OF PAYMENT			
DISPOSITION OF PT.			

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.2) Recording PSRO data on input form (continued)			. Review telephone logs maintained by the PSRO of the questions review coordinators ask to determine those fields which are difficult to complete. . If many hospitals fail to left or right justify data fields, and abstracts do not pass edits because of this, emphasize this error occurrence in the preliminary screen. . Determine whether errors may be due to carelessness, lack of sufficient training, lack of written procedures, or other factors. . Determine which data element errors are not audited by the computer. - Screen input forms for these errors, or do spot checks on a few forms; ensure that these are addressed subsequently in the retrospective quality audit.
(1.3) Identification of Principal Diagnosis and Procedure	. What definitions are being used? . Do all persons coding data fully understand the definitions? . What are the procedures for determining principal diagnosis and procedure? . Who is responsible for the determination and what is his or her training? . Are errors occurring systematically within the hospital or can errors be attributed to one or more individuals within the system?	. Uncertainity about which diagnosis or procedure should be designated as the principal or other diagnosis (judgmental errors) . Variations in definitions of "principal" among abstract service organizations, hospitals, physicians, and PSROs (procedural errors) . Hospital procedures requiring that the diagnosis listed first on the face sheet of the medical record be recorded as principal (procedural errors)	1. Data Accuracy Criteria Establish criteria for data accuracy. Through the use of routine statistical reports of hospital data and individual patient listings and indexes, a PSRO can determine some of the more obvious ordering discrepancies. A quality review methodology for identifying the various kinds of coding errors has been developed by the Commission on Professional and Hospital Activities (CPHA) and is located in Appendix A. The following types of reports maybe useful in identifying diagnosis and procedure ordering discrepancies:

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.3) Identification of Principal Diagnosis and Procedure (continued)	. Are physicians clearly indicating and updating the working diagnosis in the medical record?	. Poor quality medical records; missing or unclear information (clerical and procedural errors) . Failure of physicians to clearly indicate and update the working diagnosis (procedural errors)	. Diagnosis and procedure group reports, listing or summarizing all discharges by diagnosis or procedure group . Patient listings, listing all discharges and sorted within specified items . Error feedback reports, listing errors identified during the edit process . Data submission status reports, showing the status of coding and abstracting activity by hospital or coordinator 2. Develop specific written criteria for diagnoses ordering. 3. Establish deadlines for submitting data and for correcting errors. These deadlines may be difficult to meet in hospitals where physicians do not complete discharge summaries in a timely manner. The PSRO should work with each such hospital to improve this situation. 4. Review individual hospital data for a recent quarter utilizing the criteria developed for coding and abstracting accuracy. This can be done in the PSRO office if output reports are used. If discrepancies in ordering can be determined from this review, a sample of several abstracts representative of these discrepancies should be selected for verification. 5. Notify hospital of upcoming visit and ask that the medical records and supporting documentation be pulled from the files for these abstracts (examination of 5-7 abstracts will usually reveal patterns of coding and diagnosis and procedure sequencing).

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.3) Identification of Principal Diagnosis and Procedure (continued)			6. Do not refer to the original abstract (or copy) or worksheet prior to determining diagnoses and procedures. Write out all diagnoses and procedures as they appear in the medical record. Identify the principal diagnosis and the principal procedure. The Diagnoses and Procedures Vertification Form in Exhibit II-4, which follows, is a sample form which a PSRO or hospital may use either as is or as a part of a more detailed data verification form. The form has a column for coding all of the diagnoses and procedures; a PSRO may prefer to code and verify only the principal diagnosis and procedure due to time constraints. There is a space at the top of the form to identify the person who coded the abstract originally which will enable PSRO monitoring personnel to develop profiles by individual coder.
	. What is the data source - face sheet, or entire medical record?	. Failure to review entire medical record prior to the assignment of a code (procedural error)	7. After data verification has been performed, determine reasons for any discrepancies in ordering. If the errors appear to be judgemental, it is probable that more information in the medical record could solve this problem. If errors are due to differences in definitions, the PSRO will have to take steps to ensure that proper definitions are used. The PSRO procedure manuals should be clear and should emphasize this aspect of data collection. Frequently, medical records personnel are instructed by the hospital to use only those principal diagnoses and procedures written by physicians on the medical record face sheet. Greater accuracy could be achieved in many cases by using the entire medical record. The PSRO and hospital would have to

Exhibit II-4

PSRO DIAGNOSES AND PROCEDURES VERIFICATION FORM

Hospital Patient I.D. Number ☐☐☐☐☐☐☐☐☐☐

Abstract Service I.D. Number ☐☐

Hospital I.D. Number ☐☐☐

Coder I.D. Number ☐

Please check appropriate box to indicate the nomenclature used; ☐ H-ICDA-2 ☐ ICDA-8

DIAGNOSES

Designate A= Admitting P= Principal	Write out all diagnoses as they appear in medical record	Data Source *	Re-abstract Code	Abstract Code	Check which is Correct				Reconciled Results (If Neither Is Correct)	Reason for Discrepancy **
					Abstract	Re Abst.	Neither	Can't Determine		

PROCEDURES

Designate P for Principal	Write out procedures as they appear in medical record	Data Source *	Re-abstract Code	Abstract Code	Check which is Correct				Reconciled Results (If Neither Is Correct)	Reason for Discrepancy **
					Abstract	Re-abst.	Neither	Can't Determine		

* Designate Data Source
F = face sheet
D = discharge summary
O = operation report
P = pathology report
C = consultation

** Reason for Discrepancy Codes

1. Ordering procedure-abstract service: difference between definitions of the PSRD and abstract service
2. Ordering procedure-hospital: difference between hospital definitions and PSRD
3. Ordering judgement: difference of opinion in interpreting medical record
4. Ordering other: difference due to reason other than above
5. Coding procedure: discrepancy caused by systemmatic misuse or misunderstanding of coding system (ie., use of alphabetical index above)
6. Coding judgement: difference of opinion in classifying a diagnosis not specifically listed in coding books
7. Other coding: discrepancies caused by other than above.
8. Dependent: selection of principal procedure dependent on principal diagnosis selection

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.3) Identification of Principal Diagnosis and Procedure (continued)	. Are discharge summaries being completed in an accurate, timely manner by the physicians?	. Incomplete or insufficient discharge summary.	thoroughly discuss these problems and attempt to find a solution, possibly by informing physicians (with the support of administration and the medical staff) of the need for well designated principal diagnoses and procedures and clarifying the UHDDS definitions of these items. Ideally, the discharge summary should be a part of the record where principal procedure and diagnosis determination is made. If discharge summaries are delayed, it becomes difficult for medical records personnel or PSRO review coordinators to make accurate determinations in a timely manner. 8. It is possible that the PSRO review coordinator supervisor (or other qualified staff member) and the original abstractor will not agree on the best possible selection of the principal diagnosis and/or procedure. Such situations are generally best handled by conferring with the attending physician. 9. Diagnosis and procedure order verification should be done regardless of the type of review arrangement the PSRO has; i.e., PSRO employed review coordinator completing entire abstract; hospital review coordinator completing entire abstract; or hospital review coordinator and medical records personnel together completing the abstract. In addition to the above ongoing data quality control procedures, periodic audit procedures should also be employed. See Chapter III for a detailed description of data audit.

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.4) Coding Diagnosis and Procedures in H-ICDA-2 and ICDA-8	. Are procedure manuals complete and up-to-date? . Are the proper code books being used? . Are code books up-to-date? . Are the alphabetic and tabular indexes being used correctly? . What method is used to classify diagnoses not specifically listed in code books? Is this procedure documented? . Are dates recorded when new code books or classifications are used? . When does coding take place in the work flow process? . How many employees are assigned to coding and what is the workload? . What is the training of the coders? . Are coders further trained by PSRO personnel and how often does re-training take place? . Does the hospital notify the PSRO when new coders begin PSRO coding? . Is coding done to the fourth digit level?	. Procedural coding errors caused by improper use of the code books, such as failing to read the notes properly or using only the alphabetical index and not the tabular code book also. . Judgmental coding errors caused by inability to specifically classify a diagnosis. The coding books may not have the same word-for-word listing as indicated in the medical record. For example, a diagnosis described as "recurrent" might reasonably be classified as "chronic" or "acute", and these may be the only alternatives in the coding manuals. . Other coding errors due to number transpositions, carelessness, incomplete medical records, etc.	1. Assure that PSRO processor is editing for sex-specific codes as detailed in Transmittal No. 28. In addition, PSRO could develop age-specific edits for diagnosis and procedure codes. Appendix A from CPHA's forthcoming publication "Quality Control of Diagnosis and Procedure Coding," provides some criteria for target diagnoses which a PSRO may be able to incorporate into its edits (either computerized or manual screens). 2. Develop criteria for monitoring coding accuracy. 3. Review PSRO computer output reports containing a quarter's data from individual hospitals using the above mentioned criteria and parameters. Patient listings, reports with diagnostic groupings and error analysis reports would be the most appropriate reports to analyze; again, Appendix A suggests means for analyzing such output reports. 4. Determine, if possible, error patterns which may exist overall by individual hospital. 5. Select a small sample of abstracts (5-7) representative of coding (or error) patterns for each hospital (or coordinator). These could possibly be the same sample drawn for the previous data quality control procedure (Verification of Principal Diagnosis and Procedure Selection).

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.4) Coding Diagnosis and Procedures in H-ICDA-2 and ICDA-8 (continued)			6. Notify the hospitals of the PSRO's impending monitoring visit and ask them to pull the medical records for the selected patients. In those PSROs which do not have copies of original abstracts (as might be the case in a hospital submitting PSRO data to an abstract service), the review coordinator will have to retrieve his/her worksheet from the file for PSRO data quality review, or the PSRO would have a print-out of the abstract from its data collector or data processor. 7. When possible, compare the information in the medical record with the information on the coordinator's worksheet and with the data recorded on the abstract, to verify completeness and consistency. 8. Determine coding accuracy by writing out all the diagnoses and procedures as they appear in the medical record and coding these. Exhibit II-4, referenced earlier, is a sample Diagnoses and Procedures Verification Form which could be adapted for use by most PSROs. This form provides a record of coding discrepancies with a determination of why error may have occurred. The purpose of completing this form is not simply to determine a coding accuracy rate for each hospital, but to determine why errors are occurring. Solving a problem is easier once the reasons for discrepancies can be determined. 9. Complete Verification Form, if possible, in the presence of the original coder. This can be an effective re-training tool and would be

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(1.4) Coding Diagnosis and Procedures in H-ICDA-2 and ICDA-8 (continued)			necessary in order to designate reasons for discrepancy. Differences should be resolved, if possible, between the original coder and the monitoring person. Determine if further training is necessary, if procedure manuals need updating, if ICDA-8 coding manuals need updating, or if there are other difficulties.
(1.5) Certification of the Bill Recording the number of days certified on the bill going to the payment agencies is a relatively separate part of the data abstracting and recording function. For data quality control, however, the PSRO must verify that all bills for Federal patients are properly certified by the review coordinator for the number of days indicated on the abstract.	. What procedures are followed by the billing department to ensure timely claims review and certification by the PSRO review coordinator? . What procedures are followed by the review coordinator in certifying claims? . Does the coordinator maintain supporting documentation, particularly in the case where the input form may have been sent to the data collector prior to the time the claim is ready for certification? . What is the review coordinator's data source for certifying length-of-stay? . Is there a method to assure that duplicate claims are not submitted? . Is there a way to assure that for every claim certified, PSRO review has been conducted . Does the fiscal intermediary or fiscal agent pay the hospital for Federal patient claims which have not been certified by the PSRO?	. Insufficient written procedures to assure billing certification by review coordinator for each Federal patient reviewed. . Incorrect transfer of days certified from worksheet or abstract to billing form. . Payment made by claims payment agency without proper PSRO certification.	1. Select 5-7 discharge abstracts randomly (or use same abstracts pulled for diagnosis and procedure coding verification). 2. Notify hospital billing department of expected date of review and ask them to pull the claims for the above selected abstracts. 3. Review procedures for certifying claims. Review claims to verify presence of PSRO review coordinator certification. 4. Check coordinator's "Bill Pending" file, his/her worksheets, or other PSRO documentation for coordinator notation of the length-of-stay assigned or denied. 5. Verify with hospital and fiscal intermediary or fiscal agent that duplicate claims can be identified. 6. Verify with hospital that supporting review documentation is maintained for each certification of a Federal claim. 7. Verify with fiscal intermediary or fiscal agent that claims for Federal patients cannot be paid without a PSRO certification.

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
2. Forms Flow and Data Transfer			
2.1 Control of Supporting Documentation and Data Collection Form during Review Process	. Is supporting documentation which may be in the form of coordinator notes or worksheets, maintained in all hospitals for a specified period of time in order to provide an audit trail for PSRO data quslity monitoring? . Do both review cooordinators and medical records personnel have clearly delineated responsibility along with clearly defined procedures for controlling the worksheets and/or abstracts to assure that all patients are reviewed in a timely manner and that abstracts are sent to the appropriate place upon completion?	. Loss of worksheets, abstracts or other supporting documentation during data transfer . Untimely review of patients because of insufficient review activity controls	1. Review Activity Controls The two primary methods are a log system and a card file system. . Log System The abstract logs generally contain a patient identification number, the date on which the coordinator initiated admission review and the date the abstract was completed and sent to the PSRO office. Blanks in the abstract completion date column indicate outstanding abstracts yet to be completed. A lag analysis report should be completed weekly by all coordinators and submitted to the PSRO. This report should state number of abstracts which remain incomplete and the time lapse in days since the patient has been discharged. Not only will this indicate possible problems with timeliness, but it may also indicate overworked review coordinators or medical records personnel. . Card File System This may include tickler or date files, diagnosis pending files, bill pending files, and appeal files. The tickler file is used for planning daily activities. Abstracts or worksheets are filed under the date on which they are to be reviewed again by the review

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
2.1 Control of Supporting Documentation and Data Collection Form during Review Process (continued)			coordinator. A variation of this system provides the coordinator with a large notebook or other file with all active patients filed under floor or wing of the hospital. The coordinator may then review any or all patients in-house as he/she visits each nurse's station. Under either system, diagnosis and bill pending files are maintained until final completion of the abstract and for certification of the bill once the patient has been discharged. The coordinator's working copy, worksheet, or actual abstract is maintained in these files. Such a filing system might be helpful in those hospitals in which the worksheet is not kept in the medical record and in those hospitals using an abstract service for PSRO data collection. Review Work Control Cards have some advantages over abstract logs and tickler files in that they are easily managed. An exemplary example of such a system exists in the Mississippi Foundation for Medical Care. Material regarding the use of this card has been excerpted from the Mississippi's Review Coordinator Handbook (2-1-75) and are included on the following page. The admitting office completes patient identifying information (or uses an embossing plate). The review coordinator collects these cards daily for new admissions. The review coordinator then transfers information from the card onto the review worksheet. The review worksheet is kept in the medical record on the floor where it remains until review is completed.

Instructions for Use of Work Control Card [2]

(Exhibits II-5 and II-6)

Current Review Section

Behind the "Current Review" guide are five additional guides labeled for each day of the work week. The Review Work Control cards on the patients whose current periods of hospitalization are being reviewed will be filed in the Current Review section behind the guide for the day of the week on which the next review of the patient record is due. The cards are to be filed by room number according to the nurses' station at which the patient record will be filed.

At the beginning of each work day the cards behind the guide for that day must be pulled and the guide for that work day moved to the back of the section (see below for instructions on rotating guides for days of the week). Prior to going to the nurses' stations to begin review, work is put into order by room number according to nurses' station indicated on the Review Work Control Cards. At the end of the day, the cards are filed behind the guide for the day of the week on which the next review is due.

The guides for the work days should be rotated to insure that the cards for the work day are in the front of the box on that day. For example, on Monday as soon as you have pulled the cards move the guide labeled "Monday" behind the cards filed after the guide labeled "Friday." Doing this will assist you in scheduling reviews by making it easier for you at the end of the day to file the cards behind the guide for the day that the next review is due. The day of the next review may be one or two working days in advance of today's date, depending on the situation. If you rotate the guides for the days of the week, at the end of the day you always will file behind the first guide those cards on patient records that must be reviewed on the second working day after that day's review.

Appeals Section

When the attending physician requests a hearing by the Local Professional Review Committee or any concerned party appeals the decision of the Local Professional Review Committee, the Review Work Control Care on the patient involved will be filed in the section labeled "Appeals." Cards in this section will be filed in alphabetical order according to the patient's last name.

When the hearing has been completed and a decision rendered, note the disposition in the comments section of the care and file it in the appropriate section of the card file.

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[2] Review Coordinator Handbook, Mississippi Foundation for Medical Care, Jackson, Mississippi, 2-1-75

PLEASE NOTE: Cards on those patient records that are being reviewed by the Review Physician are not filed in this section. They are filed in the "Current" section behind the day of the week that the next review is due.

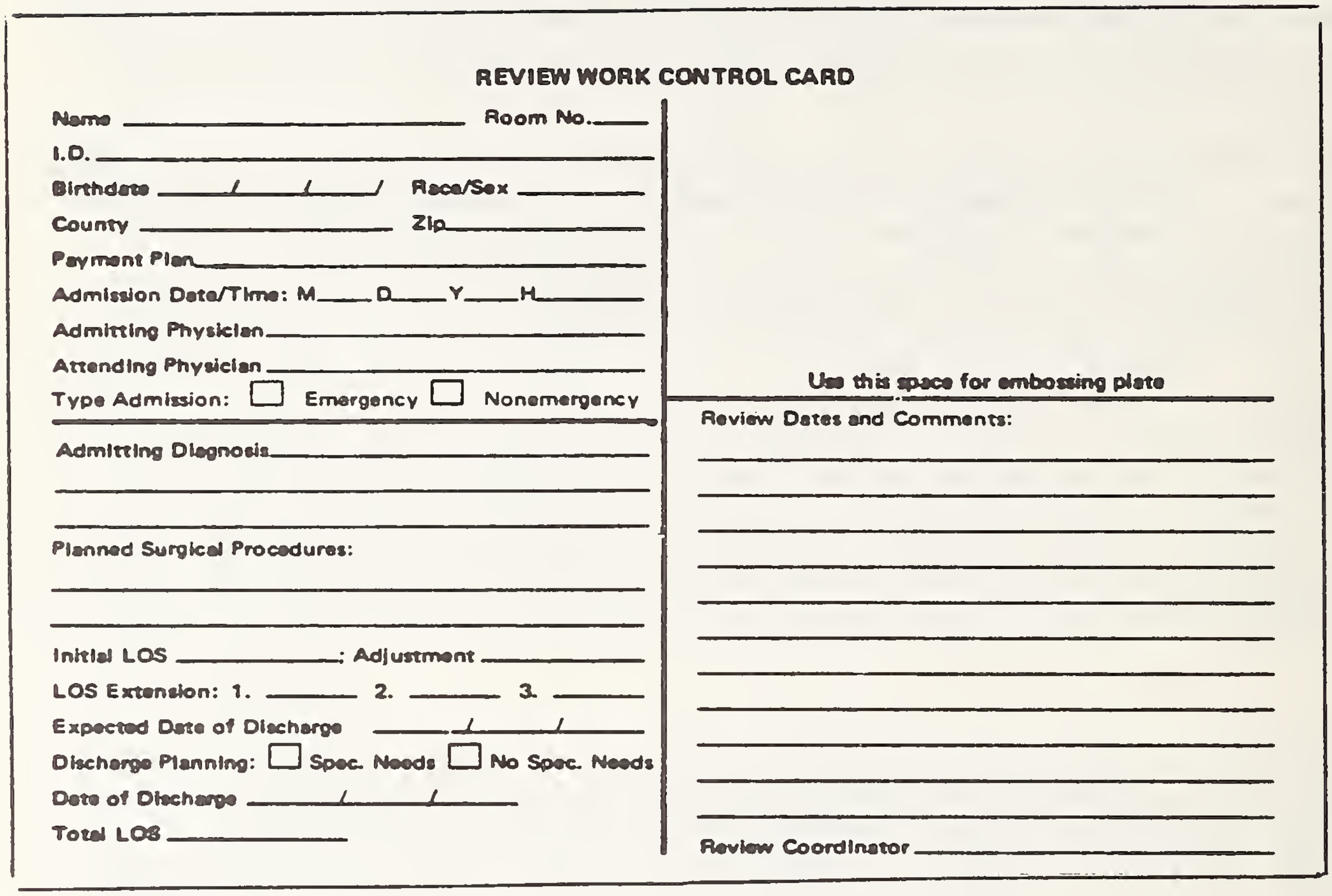
Discharges Section

After a patient, whose record has been reviewed, has been discharged and you have completed all forms and reports regarding his record, file the Review Work Control Card in the section labeled "Discharges." The cards will be filed in alphabetical order according to the patient's last name. Cards on discharges are temporary records.

NOTE: Additional items recommended would be to include the date abstract was completed and the date bill was certified. A disadvantage in this system would be the possible loss of a card, at which point a retrospective review would have to be conducted. However, the review coordinator could check numbers of cards in current review against hospital census lists to verify totals.

Such a card system could easily be adapted for those hospitals which utilize medical records personnel for completing data other than PSRO review information. The review coordinator could note the date the abstract (or worksheet) was sent to medical records for completion of coding and then place a card in a section for medical records.

EXHIBIT II-5



REVIEW WORK CONTROL CARD

Name ______________________ Room No. ______

I.D. ________________________________

Birthdate ____/____/____/ Race/Sex ________

County ________________ Zip ____________

Payment Plan ____________________________

Admission Date/Time: M____ D____ Y____ H________

Admitting Physician ______________________

Attending Physician ______________________

Type Admission: ☐ Emergency ☐ Nonemergency

Admitting Diagnosis ______________________

Planned Surgical Procedures:

Initial LOS __________; Adjustment __________

LOS Extension: 1. ______ 2. ______ 3. ______

Expected Date of Discharge ______/______/______

Discharge Planning: ☐ Spec. Needs ☐ No Spec. Needs

Date of Discharge ______/______/______

Total LOS ____________

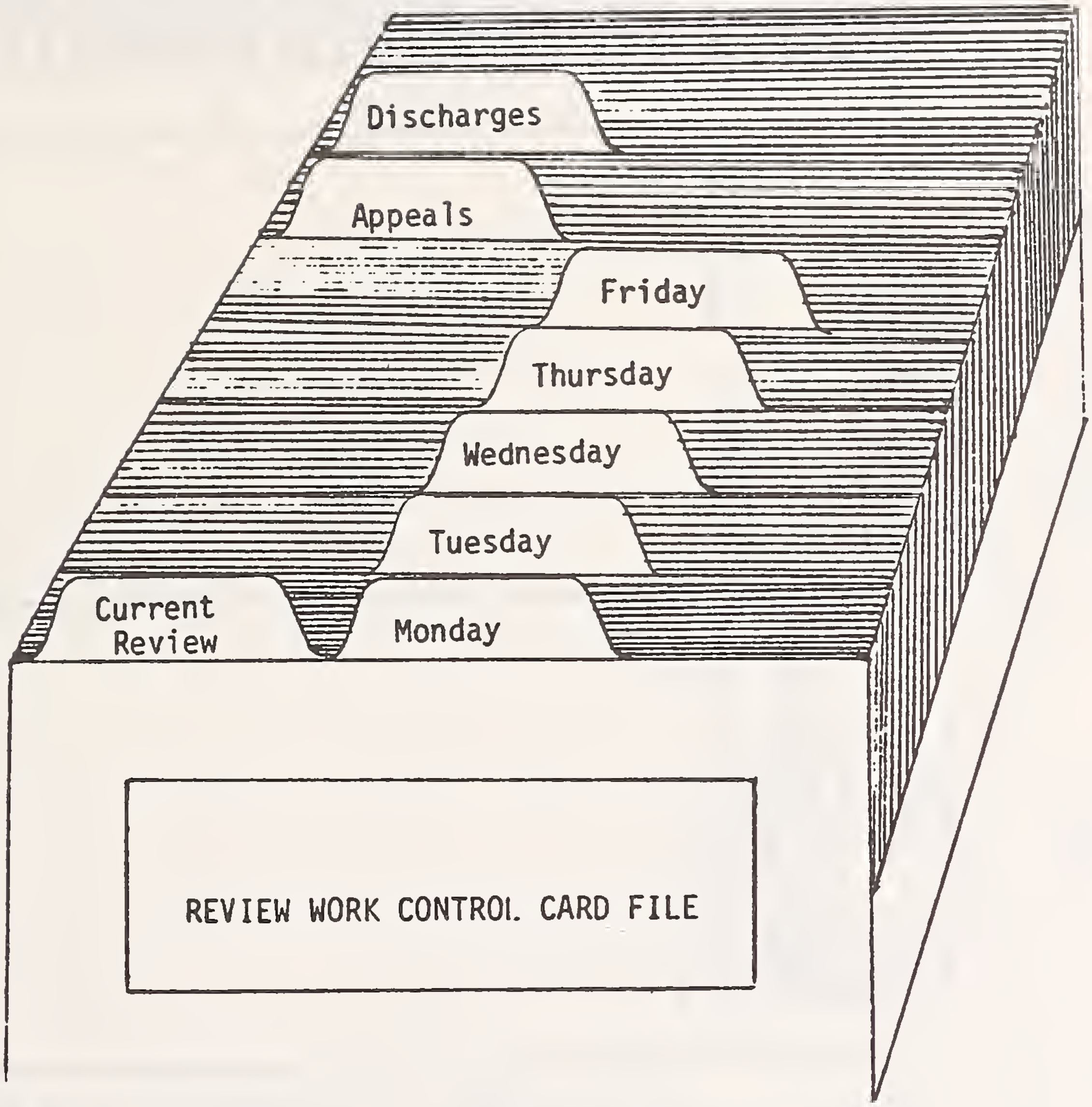
Use this space for embossing plate

Review Dates and Comments:

Review Coordinator ______________________

EXHIBIT II-6

REVIEW WORK CONTROL CARD FILE



FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
2.2 Data Transfers Data flows through the system in a number of different media or methods. The most common forms include: . Tape A common form of transferring data between hospitals and data collectors or processors, usually on a reel or occasionally on a casette. Edited by machines with appropriate software tapes, this is the speediest way of editing large amounts of data. Depending upon the type of systems in use, tape may also be used to transfer corrections to an originally submitted tape. Hard Copy Abstracts completed and batched in the hospital proceed to the PSRO or data collector. Correc-	. Are there procedures in place to verify that the correct number of abstracts are received by the PSRO, hospital, collector and processor? . Are there procedures for incorporating abstracts completed on retrospectively reviewed patients? . Is there agreement upon format of tape(s)?	. Loss of abstracts between points of transfer. . Failure to incorporate abstracts generated by retrospective reviews or automatic certification.	1. Transmittal Notifications As part of the process of batching and sending data to a data collector, the hospital can also mail separately a notice informing the intended recipient that a batch is in transit. Such notice might be a postcard listing point of origin, sender, batch number, and data. Upon receipt of the batch, the recipient verifies the batch number, enters the arrival on a log, and notifies the sender of its receipt. Coincident with this process, the recipient may wish to perform batch verification process (see below) so that only one communication need be made if a variance is detected. If the PSRO is intermediate between the hospital and the data entry organization (i.e., for screening), then it may follow similar procedures. In either instance, consecutive numbering of batches facilitates determination that a given batch has not been transmitted or received. Listings accompanying a batch which identify every document included in that batch facilitate identification of individual documents which may not have been included. Finally, a notification that abstracts for all discharges from a given month have been submitted, showing the total number of batches and total number of abstracts sent, enables verification that no batches or documents were lost in transit. 2. Batch Logs Documenting receipt of abstract batches (or tapes) may be accomplished through a batch

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
tion may involve the transfer of the actual abstract, a copy, facsimile, an error report, or the like. . CRT The use of cathode ray tube terminals for data transfer and occasionally for data base manipulation.			receipt log. This log may record point of origin, date of forwarding, date of receipt, and batch identification number. The information recorded in the log may be used to measure various activities, such as normal transit time. Forwarding documents can be recorded in the same fashion, noting the sequential batch of item number, the intended receipt and date of sending. 3. Batch Verification Every batch should contain a cover slip that lists, among other things, the identification number of each abstract in the batch and the batch total. Each batch should be corrected upon receipt and the count compared with the batch total indicated on the cover slip. Where the count varies from the total, the batch should be examined to determine which abstracts are missing or are surplus. Discrepancies would be followed up with contacts with the sender to determine the reason for the variance and locate any missing documents. Verification of receipt of each batch in writing greatly facilitates identification of missing documents.
The CRT normally is connected to the data processor via a dedicated, shared, or regular phone line. Typically the CRT is placed in the PSRO where PSRO-employed personnel enter data from hard copy received from its hospitals. Most PSRO CRT data systems are interactive in that the computer will perform edits as the data are entered on the CRT. Usually,	. Are there procedures to assure that an abstract is completed for each Federal patient and entered into the system?	. An abstract not completed for each Federal patient reviewed.	4. Batch Balancing This procedure is undertaken to insure that a discharge abstract has been prepared for every Federal patient. It is dependent on maintenance of a daily log, especially if the hospital is not routinely preparing abstracts for non-Title patients.

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
another series of edits follows after the data are entered. Corrections resulting from the second series of edits are usually handled with the transfer of hard copy, a correction system such as that mentioned above. Types of data transfer - tape, hard copy, CRT - may be used in combination. The entire system at a given PSRO may be one combination (as in CRT/hard copy) or different systems may be employed by different hospitals in the area. A common combination occurs when a hospital sends hard copy to a collector who sends a tape to the processor.			Often, abstracts have attached a form control slip or a carbon copy which is detached and retained by the hospital when the abstract has been completed and forwarded for processing. Completed abstracts are usually forwarded in batches of a given number (25, 50, or 100) or at the end of a given time (weekly or monthly). Each batch contains only abstracts for a given period of discharges and, when all discharges for the period are completed, the processor is notified that the period's data are complete and ready for processing. Similar procedures are followed for error abstracts of those for patients reviewed retrospectively. Separate control systems should be maintained for these documents. Batch balancing occurs when the number of abstracts prepared is determined to be equal to the number of discharges for the month. When abstracts are prepared on all discharges, the control is the monthly discharge census. Any discrepancy may frequently be resolved by matching the forms control slip or abstract copy against the discharge listing. Using the forms control procedures outlined above, this abstract count can be similarly matched again against the daily log counts for each month and discrepancies resolved. (It might be pointed out that the log count can also be used as a check against "source of payment totals" if these are broken out in reports which include all patients.)

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
. Output Reports In addition to data transferred as input, data are also transferred in the form of outputs. The flow of data in this form may also be controlled with an explicit data transfer monitoring system.	. Is there an ongoing means of verifying that all output reports required of the contractor are being delivered?	Incomplete or insufficient number of output reports delivered to PSRO or to the HSQB by the processor.	5. Output Receipt The contract between the PSRO and data processor should specify the outputs to be delivered to the PSRO and the dates of their delivery. Should the PSRO wish to monitor the flow of these reports, an output receipt (log, listing report name, due date, and date received) may be employed. Depending on the relationship established and the amount of information physically tranferred between the two organizations, other types of logs or verification procedures may prove helpful.
(2.3) Timeliness of Data Flow The national data base tape containing the subset of the PHDDS on Federal patients discharged for that period are to be submitted to the HSQB within 60 days following the close of the quarter.	. Does the collector or processor provide logs or reports on the status of data submission by the hospitals? . Are abstracts with errors corrected and re-entered into the system in a timely fashion? . Does the PSRO receive error listings including the status of previously identified abstracts with errors from the processor or collector? . Are the HSQB reports being submitted within the required time limit?	. Delayed completion of abstracts in hospitals. . High error rate resulting in large numbers of abstracts being submitted late. . Insufficient monitoring of processor to assuring timely submission of required reports.	Approaches for monitoring the timeliness of data transfer vary depending upon the data collection option in use in the PSRO area. In those areas where the PSRO is the intermediary between hospital and processor, monitoring is a relatively simple affair involving the use of logs and cumulative reports that may be manually or automatically compiled. In data collection and routing situations where the PSRO is by-passed by the physical document or tape flow, monitoring of the data flow is less direct. Such situations include hospital submission of internally-generated tapes to the processor and hospital submission to a discharge abstract system, which compiles the data and forwards it to the data processor. The focus on the data routing flow monitoring is at the PSRO area level. Therefore, in data processing subcontracts, the reports described below should be provided to the PSRO by the data collector and/or processor at least on a monthly basis, to assist in data flow monitoring.

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(2.3) Timeliness of Data Flow (continued)			1. Hospitals Using Abstract Systems or Using Internal Data Systems Tapes should be submitted to the processor on a regular basis, either a month's or quarter's discharges at a time, on all abstracts received during a given period (i.e., partial batches). Routing data monthly will provide greater control, and will minimize problems with delays and error corrections at the end of each quarter. Each month (if possible) the data collector or processor should report to the PSRO, by hospital: . By month, the number of discharges received and the months known to be completed. . Cumulative discharge records by hospital by month, which provide an estimate of the percentage submitted for each month. This will permit a lag analysis of the data flow through the system. . A record of error listings and the status of previously identified error abstracts, which affords the PSRO an opportunity to assure that error corrections are resolved quickly, and to identify areas of apparent difficulty. 2. Hospitals Submitting Hard Copy Abstracts Each month, a report should be compiled of the number of abstracts by month of discharges received and month completed. Again, the number of abstracts per incomplete month versus the total known or estimated discharges for the month yields the percentage of abstracts completed and submitted.

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(2.3) Timeliness of Data Flow (continued)			As above, an error listing report should be returned to the PSRO for distribution to the hospitals, or a copy should be sent to the PSRO if the report is sent directly to the hospitals. Delays should be detected through these monitoring procedures and investigated at a hospital level and their cause(s) determined. By definition, a delay is considered as such if the hospital fails to meet the established PSRO reporting requirements, such that the PSRO cannot meet its Federal reporting requirements. In many cases, delays in routing data when using intermediary collection systems can be traced back to delays by the hospital in submitting abstracts. Less frequently are such delays attributable directly to the data abstract service.
(3.) Data Entry and Editing The most common location of the point of initial data entry and editing includes: . Hospital entry into an in-house computer . Collector or processor entry of abstracts into its computer system . PSRO entry of data into a CRT tied in with a processor's computer.	. Does the collector or processor do key verification? . Are there procedures in place at the PSRO where data entry is performed through an on-site/on-line CRT to monitor the entry rate? . Has the processer provided documentation of all edit programs, (including sample input/output)?	. Key Entry Errors . Programming errors . Excessive key punch entry time per abstract. . Appropriate edits not being performed	1. Hospital or Collector/Processor Entry of Abstracts Into Computer System In this type of system environment, the PSRO may review outputs generated by the processor. These outputs include error listings by individual hospital. PSRO data quality personnel should review error reports for obvious key entry or programming errors. Key verification - whereby each abstract is keyed once by two different people - is an effective means of reducing key entry errors.

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(3.) Data Entry and Editing (continued)			2. PSRO Entry of Abstracts Via a CRT A key point in monitoring the reliability of an on-site/on-line CRT system is keeping track of the entry rate of abstracts. A log book can be maintained listing time and number of abstracts entered per unit of time. This log, coupled with documented tests of key punch entry times, provides a record of the responsiveness of the CRT to entries. Additionally, the PSRO should maintain a log of the dates, time and duration when the system goes down and related phone calls, letters, etc. These two logs can aid the PSRO not only in the monitoring and management of the system, but also during periods of contract adjustment or negotiation.
(4.) Data Processing and Output Analysis At a minimum the data base assembled by the PSRO's data processing contractor must be able to pass the PHDDS edits required by Transmittals 28 and 50.	. Are the data tapes submitted to the HSQB passing the required edits?	. Incomplete or insufficient edit routines used by the data collectors or processors.	1. The logic edits described in Transmittal 28 can be a valuable monitoring tool for processors and the PSRO. For this reason, error listings should be obtained by the PSRO on a monthly basis, along with the data flow reports described above. For those hospitals that submit the PHDDS on tape either directly or via a discharge abstract system, the error lists will show not only some logic errors initiated at the hospital but also that the systems generating the tapes for the processor have system edit difficulties that need to be addressed. Tapes generated for merging by two area processors should be error free by the standards of Transmittal 28.
The reports generated, in order to be useful, must be readable and contain adequate information in an appropriate display format.	. Are the reports accurate, understandable, and formatted in a clear usable manner? . Are the output reports used to manage and monitor review activities and quality of care?	. Unreadable reports containing inadequate information.	

PSRO DATA QUALITY CONTROL CHECKLIST

FUNCTIONAL AREA/ACTIVITY	QUESTIONS	POTENTIAL SOURCES OF ERROR	QUALITY CONTROL PROCEDURES
(4.) Data Processing and Output Analysis (continued)	. Has the processor included programming specifications? . Has the processor provided documentation including sample input/output reports? . Is the processor able to generate required physician, patient, and provider profiles.	. All required data not included on output reports . Inadequate profile generation with respect to volume, type, or format.	2. In addition to Transmittal 28 edits, other edits can be programmed into the system and used to monitor the accuracy of the data. 3. Error listings for hospitals submitting hard copy abstracts can be used to track down and remedy coding problems. Errors found in excess of 5% of abstracts submitted reflect a potentially severe problem and may indicate higher actual error rates, such as coding errors which pass the logic checks. 4. Generally, it is not feasible for cost reasons for the PSRO to receive error reports for subscriber hospitals from discharge abstract systems unless they are already being generated on a routine basis. If the latter is the case, a copy should be requested by the PSRO as part of the data collection agreement with the abstract system or the individual hospitals. 5. Feedback from the HSQB is a means by which the PSRO monitors the performance of its area processor. 6. As part of the routine utilization of output reports, the PSRO should carefully scrutinize the reports and consider possible alternatives that may improve their readability, data display or utility.

III. AUDIT PROCEDURES

III. AUDIT PROCEDURES

1. PURPOSE

Audit procedures are periodic activities conducted only by PSRO personnel, or by experts it retains, to assess the effectiveness of ongoing data quality control procedures, to determine the quality of data collected by individual hospitals, to assess personnel staffing capabilities and needs, and to aid in the overall management of the PSRO program. It is recommended that the results of these activities be communicated to individual hospitals and used as criteria for continued delegation of review activities.

Audit activities are conducted by the PSRO to fulfill its responsibility to assess and monitor hospital performance and compliance with the Memorandum of Understanding. Data accuracy, reliability and timeliness are major requirements for compliance with PSRO standards. Combining these audit procedures for data quality with other monitoring activities may be desirable in many PSROs.

Audit procedures can be both detailed and general, depending upon the functional area under audit. For instance, in the functional area of data abstracting and recording, which was subdivided into five components in the previous chapter, there is one audit procedure covering all five components. The same is generally the case for the other functional areas; that is periodic audits for large groupings of data will be conducted.

Some audit procedures will be used more frequently than others, because they can be done quickly and easily. Other procedures requiring more time (such as complete re-abstracting) may be conducted at each hospital as infrequently as every six months to a year.

As in the previous chapter, audit procedures will be presented by each functional area with a background section describing the quality requirements, and questions which should be answered prior to conducting the audit procedure.

2. DATA ABSTRACTING AND RECORDING

2.1 Background

- Ongoing operational controls described in the previous chapter included:
  - Patient Identification Review in which a daily verification utilizing an independent data source takes place

  - Pre-Screening of all abstracts for completeness, legibility, and logic prior to data entry

  - Focused Pre-Screening on all abstracts from a selected hospital for selected errors (as determined by PSRO analysis)

  - Determination and Elimination of Ordering Discrepancies, and

  - Verification of Coding Accuracy, both of which requires re-abstracting five to seven records for diagnoses and procedures only. Prior analysis of diagnostic and procedural errors determines selection of abstracts to be verified and medical records to be pulled. These two procedures would be performed regularly but not as frequently as the above procedures.

  - Bill Certification Review in which five to seven bills are pulled by Billing Department and compared with abstracts randomly selected.

- In addition to determining the effectiveness of the above operational controls, audit procedures for data abstracting and recording should also assess the quality of review documentation and timeliness of abstract completion and submittal. In addition to determining accuracy of individual data elements, such as diagnoses and procedures and those errors found through analysis of reports, audit procedures should result in an accuracy rate determination for individual employees and hospitals.

- The following audit procedure covers all aspects of data abstracting and recording with the exception of patient identification review.

2.2 Audit Procedure: Re-Abstracting

- Re-abstracting is the process of completing a new abstract form (data input form) utilizing the completed medical record. Re-abstracting is done by a PSRO employee other than the person who completed the original abstract. The new abstract is then compared to the original one (or a computer printout of the abstract) and discrepancies noted. For some discrepancies it must further be determined which abstract is correct. For instance, on the Diagnoses and Procedures Verification Form (Exhibit II-4), a column has been provided for checking which are correct codes, incorrect codes and indeterminate codes. Quite often, correct codes cannot be determined due to incomplete medical records and medical terminology which does not exactly match terminology in code books. In determining accuracy rates for each data field, this factor would have to be taken into consideration.

- The amount of time required to re-abstract a single medical record will vary according to the number and type of PSRO data elements, the organization and quality of the medical record, the medical complexity of the case being investigated, the familiarization of the abstractor with hospital and medical records department procedures, and with the training and background of the abstractor.

- Once the PSRO determines how many and which abstracts are to be re-abstracted, it must notify the hospital, giving it enough time to pull the required records. To the extent possible, re-abstracting should be arranged so as not to cause a major disruption in the activities of the medical records department.

- Sample selection procedures should be developed to identify abstracts which are most representative of possible problem areas yet provide a good cross-section of abstracts completed by various individuals. The size of the sample will depend upon the hospital's volume of Federal beneficiaries discharged. The size of a sample may also vary as a function of previous findings and audit experience.

The New York County Health Services Review Organization (NYCHSRO) has developed a sophisticated sampling technique for selection of sample sizes, which is described briefly in Appendix C. A very intricate statistical sampling method involving proportions of items in error and confidence limits for data was used to arrive at the sample sizes. NYCHSRO believed such a method was necessary because of its tremendous discharge volumes. Statistical sampling methods, however, are probably not necessary for the majority of PSROs. Whatever sample is selected, it should contain not only data expected to be defective, but also a moderate amount of abstracts which have passed all previous screens (including computer edits) and are believed to be acceptable. Generally, the sample should neither be so large that it would require excessive employee time, nor so small that it would give a misleading picture of the level of quality.

- Once a sample has been selected, and abstracts retrieved from PSRO files, the PSRO will notify the hospital in writing, listing the identifying information necessary for the hospital to pull the medical records. 1/

1/ PSROs with hospitals using an abstract service where there are no hard copy abstracts available should request individual patient printouts from the hospital or the data collector and/or processor. If, for any reason, this cannot be accomplished, the review coordinator's supporting documentation (i.e., worksheet) would have to be used. If there is no supporting documentation and computer listings are not available, the PSRO will not be able to audit the review process adequately.

- Comparison of samples could be taken one step further in those PSROs with computer capability to produce printouts of selected abstracts. The printout, hard copy abstracts, re-abstracts and source documents (medical record and review worksheet) could also be compared for discrepancies.

- After comparing abstracts, the PSRO should develop accuracy rates for each data element. These accuracy rates will help determine credibility of reports, profiles, and norms developed by the PSRO. The use of the data will determine the significance of each element. Among PHDDS elements, the impact of errors in some elements may be much greater than in other; i.e., diagnoses in the development of length of stay norms versus race. Similar analysis should be conducted for each hospital.

- Types of errors should be classified: such information is useful in determining training and retraining needs. It may also indicate a need to change procedures, data forms or quality control procedures.

Coding Errors Which May Be Encountered

1. Ordering Procedures-Abstract Service: difference between definitions of the PSRO and abstract service

2. Ordering Procedures-Hospital: difference between hospital definitions and PSRO definitions

3. Ordering Judgment: differences in opinion in interpreting medical record

4. Coding Procedure: discrepancy caused by systematic misuse or misunderstanding of coding system (i.e., use of alphabetical index alone)

5. Coding Judgment: difference of opinion in classifying a diagnosis not specifically listed in coding books

6. Dependent: selection of principal procedure dependent on principal diagnosis selection

Abstracting and Recording Errors

1. Omission - data element left blank

2. Transcriptional - information incorrectly copied from source document

3. Procedural - data coded incorrectly; i.e., alpha and numeric codes used incorrectly, fields not properly right or left justified, review procedures not properly followed causing abstract error.

- In those PSROs with data quality control monitoring separate from the PSRO hospital assessment and monitoring of review activities, results of re-abstracting should be shared. Errors made in the review process causing data element errors should be brought to the attention of the PSRO Review Coordinator Supervisor or other person responsible for concurrent review monitoring.

- During the re-abstracting process copies of the hospital bills sent to the fiscal intermediary should be reviewed to verify that all bills were certified and that the correct number of days were certified. The PSRO logs containing that number of bills certified for the last quarter should be compared to the fiscal intermediary's listings of Federal patients if these were made available to PSROs.

3. FORMS FLOW CONTROL AND DATA TRANSFER

As part of the periodic data quality audit, the PSRO needs to examine the integrity of data transfer procedures. There are essentially two elements in the accomplishment of this objective:

- The PSRO should verify the accuracy of statistics maintained by hospitals, intermediaries, data collectors and/or processors, and the PSRO itself concerning the numbers of admissions and discharges. The particular manner in which this can be accomplished is highly dependent upon the PSRO's individual system configuration. For example, the PSRO may suggest or require that review coordinators maintain a notebook of the hospital's daily discharge listings. The PSRO audit team could then compare cumulative listings from the notebook with statistics derived from the PSRO data receipt log, processor reports and, possibly, statistics obtained from fiscal intermediaries. In this way, the PSRO could identify potential trouble spots in the system.

- The effectiveness of any quality control programs depends in large part on the extent to which personnel adhere to procedures. Uniformity of activity requires that procedures be documented in a useful form. The PSRO audit team can, therefore, use such procedure manuals in conjunction with team activities to determine the extent to which program personnel adhere to procedures. Deviations should be documented and appropriate corrective action taken.

4. DATA ENTRY AND EDIT

Data entry and edit auditing is a key part of maintaining control over the quality of systems operations. Activities that address this area include the following:

- The audit team should scrutinize monthly and quarterly error reports against source documents to determine key entry and programming errors.
- Procedure manuals should be reviewed for completeness, and the audit team should attempt to examine the extent to which such manuals are followed.
- In the case of an on-site/on-line CRT system, the team should examine entry logs and system performance logs to determine any patterns or trends that require attention, such as increasing key entry times or significant system down time.

5. DATA PROCESSING AND OUTPUT ANALYSIS

A final step in the control of the data system entails checks on the system edit package capabilities and the output reports themselves.

- Prior to system implementation, the PSRO should subject the processor's edits to a test package of dummy abstracts. These abstracts contain coding and logic errors known to the PSRO. The error reports generated by the processor gives the PSRO a good idea of the nature and adequacy of the processor's edit. HSQB has available such a package designed to test PHDDS edits.
- Periodically, the PSRO should submit test packages to check the ongoing quality of the processor's system. Unless problems are detected, such tests do not need to be as exhaustive as the initial system test. Periodic tests provide the PSRO with the opportunity for examining the adequacy with which the processor has implemented changes in the system that may have been requested by the PSRO.
- In addition to the test package, the audit team should examine output reports for logic. The particular logic check or manual relationship edits to be performed should be documented in the audit team procedures manual.

APPENDIX A

CRITERIA DEVELOPMENT FOR DATA QUALITY MONITORING

Introduction

In many instances it is possible to examine the quality of PSRO data from analysis of the routine reports produced by PSRO data processors. This is particularly true with respect to areas of coding difficulty, which have historically been both tedious and difficult to identify and control.

The following materials produced by the Commission on Professional and Hospital Activities (CPHA) are strongly oriented in this direction and provide the groundwork for data quality control activities which may be performed to a considerable extent within the PSRO offices. PSROs are encouraged to pursue such quality control procedures, which may prove both efficient and effective in accomplishing the objectives of data quality control activities. It must be understood, however, that the approach is still being developed and refined by CPHA. Criteria to be used for examining routine reports and guidelines for use of these criteria in an ongoing quality control system are being developed by CPHA and will be published and available to PSROs.

Criteria Development for Data Quality Monitoring*

Any quality control system has five essential components:

1. Establish criteria.
2. Perform surveillance.
3. Analyze deviations of performances from criteria.
4. Take action.
5. Follow up

Monitoring is one method of surveillance which, when used with specified criteria, is useful for identifying chronic or systematic errors occurring in a process. A criterion is a parameter and a standard taken together--a parameter is something which can be measured and a standard is the expected level of performance for that parameter. For example, in monitoring assignment of principal diagnosis a parameter might be "percent of patients for which H-ICDA** code 412.9 (Other and unspecified chronic ischemic heart disease) is recorded as principal diagnosis" and the standard would be "0%." The criterion then for H-ICDA code 412.9 appearing as principal diagnosis is 0% of all patients.

---

*This concept is excerpted from a forthcoming publication Quality Control of Diagnosis and Procedure Coding to be published by the Commission on Professional and Hospital Activities, Ann Arbor, Michigan.

**Hospital Adaptation of ICDA (H-ICDA), Second Edition, Commission on Professional and Hospital Activities, Ann Arbor, Michigan, 1973.

One Method of data accuracy monitoring is comparing the data in routine statistical reports and patient indexes with pre-established criteria to check for the accuracy of coding diagnoses or procedures, of sequencing of diagnoses or procedures, or of abstracting. Deviations of performance from criteria, as shown by the monitor, indicate the need for further investigation of the cause of the errors.

Data quality monitoring finds conditions which could appear logical on a single abstract but, when found among several abstracts, indicate chronic problems; for example, problems in the training of coders or misunderstanding of the procedures used to code.

Establishing criteria for monitoring is a two-step procedure:

1. Perform an analysis to determine the potential sources of systematic error which can occur.

2. Establish criteria which effectively detect these systematic errors.

Attachments 1 and 2 illustrate this two-step procedure for establishing criteria for accuracy of diagnosis coding and for assignment of principal diagnosis. Examples of specific criteria are given for each source of error. Many other criteria can be developed. Attachment 3 discusses the sources of systematic errors for diagnosis coding and for assignment of principal diagnosis.

It should be noted that monitoring can be done using only a small number of criteria. Because the procedures a coder uses are probably the same for all codes, the types of errors uncovered by using a few criteria pervade the coding of all diagnoses.

Additional criteria for diagnosis coding and sequencing and criteria for operation coding, operation sequencing, and abstracting of other items in the PHDDS, are being developed and will be included in the CPHA publication.

Attachments: 1. Assigning a Diagnosis Code

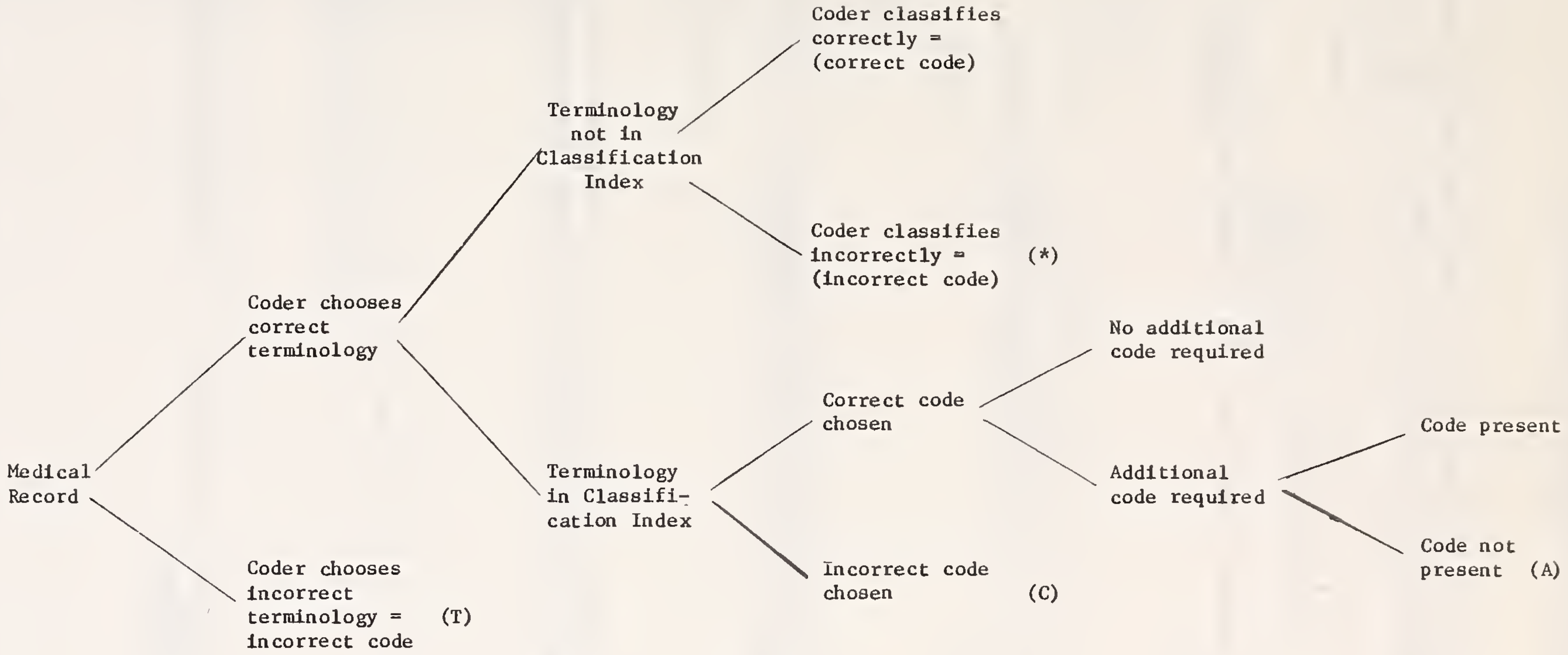
2. Assignment of Principal Diagnosis

3. Sources of Systematic Errors

Attachment 1

Assigning A Diagnosis Code

Flow Chart of Possible Sources of Systematic Errors


Medical Record
Coder chooses correct terminology
Coder chooses incorrect terminology = incorrect code (T)
Terminology not in Classification Index
Terminology in Classification Index
Coder classifies correctly = (correct code)
Coder classifies incorrectly = (incorrect code) (*)
Correct code chosen
Incorrect code chosen (C)
No additional code required
Additional code required
Code present
Code not present (A)

(*) Not a systematic error
(T),(C),(A) Example of monitor criteria given

Note: Transcription errors not taken into account since these occur randomly.

Examples of Criteria for Error Type T: Coder Chooses Incorrect Terminology*

Criteria 1:

Parameter: % of patients with code 410.9 (Acute myocardial infarction, site not specified) who stayed more than one day.

Standard: 0%

Criteria 2:

Parameter: Number of patients with code 583 (Glomerulonephritis, unqualified).

Standard: 0

Criteria 3:

Parameter: Number of patients with code 590.2 (Pyelonephritis, unspecified).

Standard: 0

Criteria 4:

Parameter: Number of patients with code 490 (Bronchitis, unqualified).

Standard: 0

Criteria 5:

Parameter: Number of patients with code 725.3 (Derangement and displacement of intervertebral disc, site unspecified).

Standard: 0

---

*Criteria are based on classification structure of the Hospital Adaptation of ICDA (H-ICDA), Second Edition.

Examples of Criteria for Error Type C:
Coder Chooses Incorrect Code When Terminology Is In Index*

Criteria 1:

Parameter: % of patients with code 412.0 (Chronic ischemic heart disease with healed myocardial infarction) who also have code 412.9.

Standard: 0%

Criteria 2:

Parameter: % of patients with any code in the range 430.0-436.1 or code 438.0 (Cerebrovascular disease) with a code in the range of 344.0-344.9.

Standard: 0%

Criteria 3:

Parameter: % of patients with code 650 (Delivery without mention of complication) who also have a code in the range of 651.0-664.9 (Delivery with complication).

Standard: 0%

---

*Criteria are based upon the coding rules of the Hospital Adaptation of ICDA (H-ICDA), Second Edition.

Examples of Criteria for Error Type A: Additional Code Required But Not Present*

Criteria 1:

Parameter: % of patients having code 250.2 (Adult onset diabetes mellitus with other complications) with additional codes indicating the complications, e.g., codes

357.9 707.0
367.0 707.1
377.4 707.9
445.9

Standard: 100%

Criteria 2:

Parameter: % of patients having code 305.3 (Chronic nonpsychotic organic brain syndrome due to circulatory disturbances) with additional codes indicating the cause (codes in the range of 393-458.9).

Standard: 100%

Criteria 3:

Parameter: % of patients with code 403.2 (Hypertension secondary to other renal disease) with additional codes indicating the cause, e.g., codes

250.6
580-593.5
753.0-753.5,
753.9

Standard: 100%

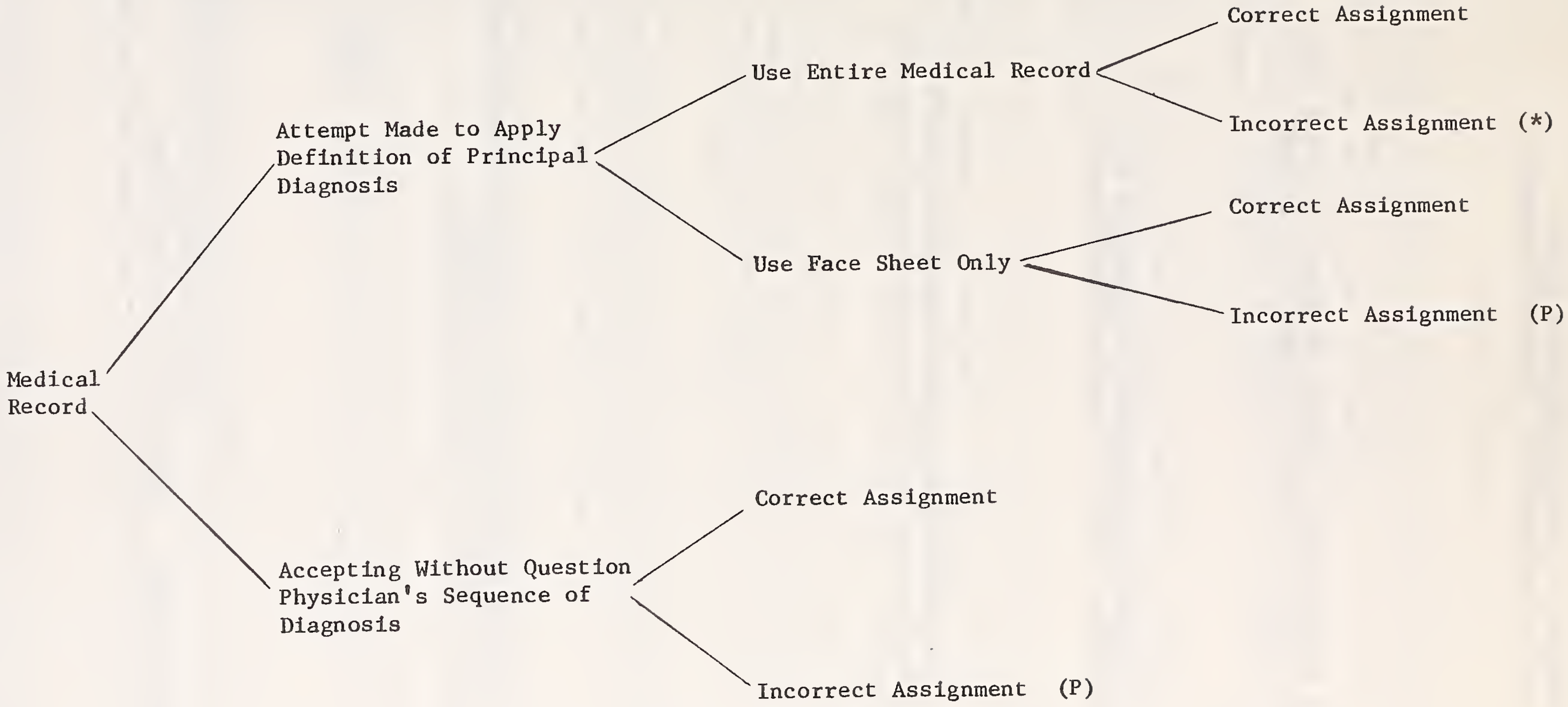
---

*Criteria are based upon the coding rules of the Hospital Adaptation of ICDA (H-ICDA), Second Edition.

Attachment 2

Assignment of Principal Diagnosis

Flow Chart of Possible Sources of Systematic Errors



(*) Not a systematic error
(P) Examples of monitor criteria given

CPHA
Commission on Professional and Hospital Activities *1968 Green Road Ann Arbor, Michigan 48105*
Nonprofit organization sponsored by the American College of Physicians, American College of Surgeons, American Hospital Association, Southwestern Michigan Hospital Council
CPHA 74-10-73

Examples of Criteria for Error Type P: Error Made in Assignment of Principal Diagnosis*

Criteria 1:

Parameter: % of patients with principal diagnosis of 412.9 (Other and unspecified chronic ischemic heart disease).

Standard: 0%

Criteria 2:

Parameter: % of patients with principal diagnosis of 437 (Generalized ischemic cerebrovascular disease).

Standard: 0%

Criteria 3:

Parameter: % of patients with principal diagnosis of 412.0 (Chronic ischemic heart disease with healed myocardial infarction).

Standard: 0%

---

*Criteria are based upon the UHDDS definition of principal diagnosis and the Hospital Adaptation of ICDA (H-ICDA), Second Edition.

Attachment 3

Sources of Systematic Errors

The processes of coding diagnoses and procedures and of assigning principal diagnosis and principal procedure are complex and errors can occur at any one of a number of points.

The sources of error displayed in Attachments 1 and 2 describe the major categories of systematic error which occur in diagnosis coding and in the assignment of principal diagnosis.

Each of these major categories of error may have more than one underlying cause. When this occurs it is not possible to conclude, by use of the criteria alone, just what the underlying cause might be. Accurate conclusion here is dependent upon observation of the actual procedures used by the coder.

The following is a description of the four sources of systematic error in diagnosis coding and in assignment of principal diagnosis which can be detected by means of a data monitor. When a category of error has more than one underlying cause, this is also discussed.

1. (T) Coder chooses incorrect terminology.

   The first step in coding is determination of the terms to be coded. Errors occur when the coder selects the incorrect or incomplete terminology so that the code assigned to those terms (which may be the correct code for those terms) does not describe the patient's actual diagnosis or condition.

   This type of error is usually caused by the coder using only the face sheet, which itself may contain incomplete terminology, to determine the terminology to be coded. Accurate terminology determination requires the entire record be reviewed.

   Coding by use of the face sheet only can result in errors in both individual codes as well as errors in the totality of codes.

2. (C) Coder chooses incorrect code.

   Many categories in the disease classification (both H-ICDA-2 and ICDA-8*) contain instructions telling the user that certain codes may not be used in combination with certain other codes.

---

*Eighth Revision International Classification of Diseases, Adapted for Use in the United States (ICDA-8).

Errors occur when the coder does not follow the instructions of the classification and uses incorrect code combinations, either because of coding directly from the index (which does not contain the instructions) or because even though the Tabular List is referred to the instructions are not read (or understood) completely.

3. (A) Additional code required but not present.

Many categories in the disease classification (both H-ICDA-2 and ICDA-8) contain instructions telling the user that certain conditions require more than one code in order to describe the condition completely.

Errors occur when the coder does not follow the instructions of the classification and omits the additional code. This occurs when the coder either codes directly from the index (which does not contain the instructions) or refers to the Tabular List but does not read (or understand) the instructions completely.

4. Error in assignment of principal diagnosis.

Error in assignment of principal diagnosis has four causes:

a. The abstractor has a misunderstanding of the definition of principal diagnosis.

b. The abstractor makes an attempt to determine which of many diagnoses is principal, and though a decision is based on information gleaned from the entire medical record, the wrong decision is made.

c. The abstractor makes an attempt to determine which of many diagnoses is principal and bases a decision on the information contained on the face sheet of the medical record.

d. The abstractor accepts without question the sequence of diagnoses as written by the physician on the face sheet of the medical record and the physician has not sequenced the diagnoses according to the requirements of the UHDDS.

The monitor criteria detect errors in the selection of principal diagnosis but do not detect the underlying cause. This can be done only by observing the actual procedure used by the abstractor.

APPENDIX B

CASE STUDY
CENTRAL MARYLAND
PROFESSIONAL STANDARDS REVIEW ORGANIZATION

Preface

The following case study describes the data quality control procedures developed by Central Maryland Professional Standards Review Organization (CMPSRO) to control the quality of data collected through existing discharge abstract organizations.

We are grateful to CMPSRO and Barbara Reinthala, Health Data Analyst, for providing us with the procedures and forms which CMPSRO is using and in the process of further refining to control the quality of the data.

CENTRAL MARYLAND PSRO PROCEDURES

Information collected on Federal beneficiaries via the HDS and PAS abstracting systems are routinely monitored for accuracy on a monthly basis. The number of records monitored is based on the number of worksheets received at the CM-PSRO offices for each hospital during a designated month. Usually, ten percent of a month's discharges will be monitored. This may vary according to the size of the hospital.

SITE (MONITORING) PREPARATION

Hospitals to be monitored are notified at least one week prior to a visit. If a visit is cancelled or has to be rescheduled, hospitals must be notified of this as soon as possible.

A. Determine which month's abstracts are to be monitored.

B. Determine the number of abstracts received from the hospital during that month and percentage to be checked.

C. Randomly select and copy (from batches on file) worksheets which are to be monitored, if necessary.

D. Contact the designated hospital and provide medical records personnel with the names, medical record numbers, and discharge dates of patients whose records are to be reviewed.

ITEMS TO BE MONITORED

HDS/PAS abstracts are to be checked for:

A. Accuracy of information recorded on the abstracts: U" elements (items 1 through 14). Abstracts should be verified by comparing information in the medical record with that on the abstract.

B. Accuracy of coding - Discharge diagnoses and procedures should be verified by checking the medical record and by consulting H-ICDA-2 or ICDA-8 codebooks.

C. Accuracy of concurrent review: P" elements (items 15-31). The concurrent review section of the corresponding worksheet should be compared with the concurrent review portion of the HDS/PAS abstracts to assure that information has been correctly transferred from the worksheet to the abstract.

RECORD/ABSTRACT REVIEW

Data monitoring worksheets are used when reviewing HDS/PAS abstracts. Listed on the worksheets are the 31 data elements that are currently being collected by CM-PSRO. Under the columns opposite the data elements, record for each record/abstract reviewed: (see Exhibit B-1)

Hospital ______________________________

Date ______________________________

Exhibit B-1

DATA ELEMENT	RECORD# ERROR	RECORD# ERROR	RECORD# ERROR	RECORD# ERROR	RECORD# ERROR	RECORD# ERROR	RECORD# ERROR	RECORD# ERROR
1. Person ID								
2. DOB								
3. Sex								
4. Race								
5. Residence								
6. Hospital ID								
7. Admit Date/Hour								
8. Disch. Date								
9. Attending MD								
10. Operating MD								
11. DX/Coding								
12. Procedures								
13. Pt. Disposition								
14. Exp. SRC Pay M.								
15. ICD								
16. ACP								
17. BICD								
18. ACLR								
19. TDC								
20. TR-PA								
21. Total CSRs								
22. Ext. Denial								
23. Days 1st CSR								
24. Total LOS								
25. Acute Cert. Days								
26. Admin. Cert. Days								
27. Grace Days								
28. Other Days								
29. Admin. Reasons								
30. Other Reasons								
31. Date Cert./Rev.								
Total Errors								

A. The medical record number.

B. The correct information when an error is found.

If there are no errors for a particular element, leave the space blank. One column should be used for each record/abstract reviewed. The total number of errors found for each record should be noted under the "Record Error" columns. At the end of each visit, a copy of the data monitoring worksheet should be made and attached to abstracts for which errors have been detected. These should be given to the appropriate person in the Medical Records Department for abstract correction.

MONTHLY DATA MONITORING SITE VISIT REPORT

At the end of each site visit, the short form data monitoring report should be completed. These reports should be completed as shown below: (see Exhibit B-2)

Hospital: 800 Date Reviewed: 10/28/76
Number of Discharges: 300 Discharge for Month of: Sept.
Number of Records Reviewed: 30 Reviewed by: S. Smith

Number of errors found: 36
Error Rate: 11%
Person notified of errors: Mrs. J. Jones

Note: The calculations for the error rate is based on number of elements (31) times the number of records reviewed. One Data Monitoring Site Visit Report sheet may be used for three visits; however, to avoid possible errors, the same sheet should be used for one hospital. Data Monitoring Worksheets should be attached to the report sheet and used as a reference for preparing the quarterly report to the hospitals.

QUARTERLY SUMMARY

At the end of each quarter (or three-month period), a summary of the number and types of errors found will be presented to administrative liaisons and to the Medical Records Department heads. A copy of the summary will be kept on file at the CM-PSRO offices.

DATA MONITORING SITE VISIT REPORT

Exhibit B-2

Hospital:
Number of Discharges:
Number of Records Reviewed:

Date Reviewed:
Discharges for month of:
Reviewed by:

Number of Errors found;
Error rate;
Person notified of errors;

COMMENTS ____

____

____

Hospital:
Number of Discharges:
Number of Records Reviewed:

Date Reviewed:
Discharges for month of:
Reviewed by:

Number of Errors found:
Error rate:
Person notified of errors:

COMMENTS ____

____

____

Hospital:
Number of Discharges:
Number of Records Reviewed:

Date Reviewed;
Discharges for month of:
Reviewed by:

Number of Errors found:
Error rate:
Person notified of errors:

COMMENTS ____

____

____

EXHIBIT B-3

Hospital ____________________

Month ____________________

CM-PSRO DEFICIENCY FORM

BATCH DATE	Count	MA MDC	SS#	Adm. Date	Dis. Date	ACP	ICP	ACLR	1st CSR	TR PA	CSR	CSR PA	Tot. LOS	A-C Days	Adm. Days	Grace	Den. Used Days	TDC	BICD	CSR D	Rea.	Tot. Rev.	Rea.	Date Cert.	Total Def.
Totals																									
Rate																									

Remarks

Worksheet Deficiency Monitoring

PURPOSE: To determine whether PHDDS elements are recorded consistently and accurately

Ten percent of the worksheets contained in batches received from CM-PSRO hospitals will be reviewed for deficiencies (errors). One CM-PSRO Worksheet Deficiency Form per hospital per month will be maintained for recording errors found during review. All batches received from a given hospital within a one-month period will be recorded and reviewed.

If a hospital is found to be making errors frequently, a 100 percent review of documents received from that hospital will be performed for a specified period of time (usually one month). The Patient Review Coordinator office will then be contacted to be informed of the results of the review and to discuss the cause(s) of the errors. If this does not alleviate the problem, the PRC(s) and clerk-technician, if any, will be requested to attend a short refresher training session on data collection and recording. The training session will be conducted by the Systems Manager and/or the Health Data Analyst. The CM-PSRO Worksheet Deficiency Form should be completed in the following manner: (Exhibit B-3)

Hospital : Enter the PSRO assigned number of the hospital.

Month : Enter the month batches were received.

Batch Date ; Record the date of receipt and batch letter (if any) noted on the batch envelope.

Count : Record the total number of documents contained in the batch.

MA/MDC : Determine whether the Medicare or Medicaid number has been recorded. (note: If the patient is a medical assistance applicant, or has been designated as a potential MA/MDC patient, omission of this number will not be considered as an error; however, letters indicating the potential pay source should be circled).

SS# : Determine whether the patient's social security number has been recorded. (note: If the SS# is recorded as unknown or the patient has no SS#, omission of this item will not be considered as an error).

Adm. Date : Determine whether the admission date has been recorded.

Dis. Date : Determine whether the discharge date has been recorded.

Worksheet Deficiency Monitoring

ACP : Determine whether the admission certification process was recorded accurately, i.e., if the ACP was recorded as code 2 (concurrent admission review-certification granted), the date of initial review for certification should be no more than two working days after the patient's admission and before discharge.

ICD : Determine whether the number of days certified at admission was recorded accurately by comparing the number entered for this item with the first number recorded under the "Extended" column of the worksheet. (Note: This item should not be completed for ACP code 3 - certification denied, or code 4 - concurrent admission review not performed).

ACLR : Determine whether the admission certification level of review was recorded accurately.

1st CSR : Determine whether days recorded as being assigned at the first continued stay review (if any) were recorded accurately. Comare with figure given in "Extended" column of the worksheet.

TR-PA : Determine whether the total number of reviews for admission and extension(s) that were referred to the physician advisor were recorded accurately (if applicable).

CSRs : Determine whether the total number of approved continued stay reviews performed by the PRC and PA were recorded accurately.

CSRs PA : Determine whether the number of extensions (approved or denied) referred to the PA were recorded accurately.

TOT. LOS : Determine whether the total length of stay, computed from date of admission to date of discharge, was recorded accurately. Do not count day of discharge when figuring this item. Total LOS = Acute Cert. Days + Grace Days + Den. Used Days.

A-C Days : Determine whether the number of acute certified days were recorded accurately. This item should not be completed if ACP is 3.

Adm. Days : Determine whether the number of administrative days (social service) were recorded accurately (if any).

Worksheet Deficiency Monitoring

Grace : Determine whether the number of grace days (if any) were recorded accurately. Should be no more than three, Medicare patients only.

Den. Used Days : Determine whether the number of denied days (non-certified) used by the patient were recorded accurately.

TDC : Determine whether the total number of certified days were recorded accurately.

If ACP is code 3, this item should be blank.

BICD : Determine whether the basis of assignment of initial certified days were recorded accurately. If ACP is code 3 or 4, this item should be blank.

CSRs-D : If an extension was denied, this item should be completed with a code 2.

Reas. : If any administrative days were used, this item should be completed.

Tot. Rev. : Determine whether the total number of reviews performed by the coordinator were recorded accurately. Includes admission reviews, continued stay reviews, and interim reviews.

Reas. : If there were any denied days used, this item should be completed.

Date Cert. : This item should be completed if ACP is code 1, 2, or 4.

Total Def. : Count deficiencies (errors) recorded across in each column and enter the total under this item. This item will show the total number of errors found in each batch.

Totals : This column should show the total number of errors found in each category for the month.

Rate : Determine the error percentage rate for each category for the month. Overall error rate for the month (total number of deficiencies divided by total number of worksheets contained in the batch reviewed) should be entered in the last space under "Total Def.".

Remarks: The reviewer should note here any relevant comments regarding the findings for the month.

APPENDIX C

CASE STUDY
EASTERN CONNECTICUT PSRO

Preface

The following case study describes the data system and data quality control procedures developed by the Eastern Connecticut PSRO to control the collection and processing of the PHDDS and optional data elements in this PSRO area.

We are indebted to the Eastern Connecticut PSRO for its support and cooperation in the effort to develop a data quality control system which will be useful to all PSROs, and especially to Donald Woodbury, Administrative Director; Myra Pfisterer, Director of Operations; and Kathyrn Church, Data Coordinator for their time and assistance, without which preparation of this case study would not have been possible.

Case Study

PSRO: Eastern Connecticut PSRO

PSRO Personnel Involved in Data Activities

Donald Woodbury, Administrative Director
Myra Pfisterer, Director of Operations
Kathryn Church, Data Coordinator
Joseph Burnell, Delegated Review Supervisor
MaryLyn Sylvester, Data Secretary
Jennie Ouellette, Key Entry Operator

ENVIRONMENT

The Eastern Connecticut PSRO area contains seven hospitals located throughout the eastern part of the State. All seven hospitals are delegated, and they account for some 19,000 Federal beneficiaries discharged annually. Each hospital completes the PSRO's data collection abstract and forwards the abstract to the PSRO office. The PSRO's data processing subcontractor is the Dikewood Corporation. Data entry is accomplished through a CRT terminal by PSRO personnel using Dikewood's on-site on-line option.

All routine data and monitoring activities are described in detail in the PSRO's General Forms Instruction Manual. Detailed procedure manuals are provided to the coordinators, and include instructions concerning performance of their functions, instructions concerning data collection and submission to the PSRO, and reference materials. There are also detailed procedures concerning the data-related activities of all personnel in the PSRO office. A sample of each form used by the PSRO is provided.

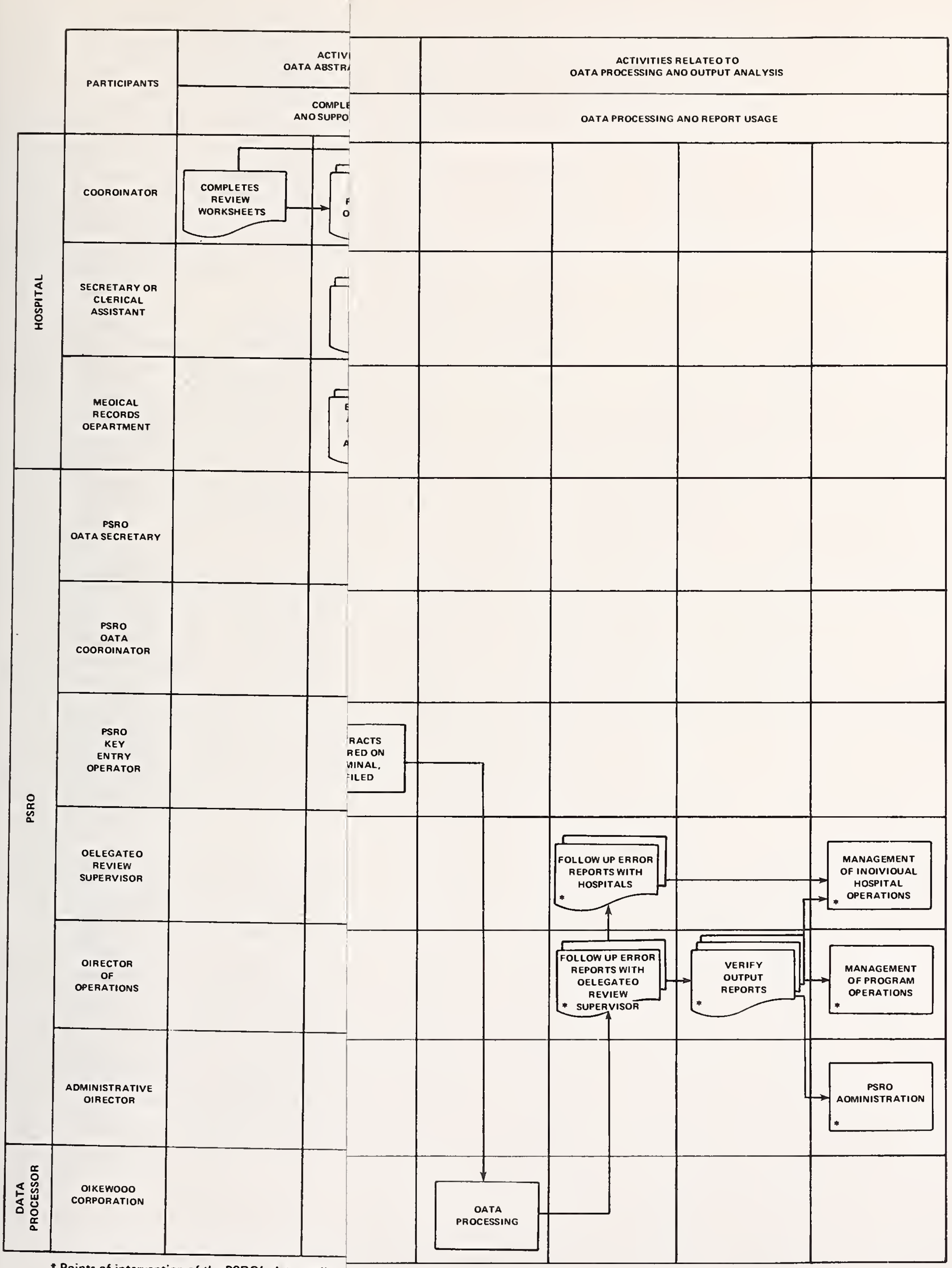
DATA SYSTEM

The data system developed by the PSRO is dependent on worksheets and abstracts for input, and is not significantly different from the data systems developed by most PSROs. It is depicted graphically in Exhibit C-1 on the following page, and is described in the following narrative.

Activities Related to Data Abstracting and Recording

Gathering of information for PSRO purposes begins in the Admissions Office of each hospital. All but one hospital provide their coordinators with copies of the face sheet for each Federal beneficiary admitted (or for each admission to be reviewed, if all patient review is conducted); the other hospital provides the coordinator with an addressograph printout. The exact amount of information received from the Admissions Office

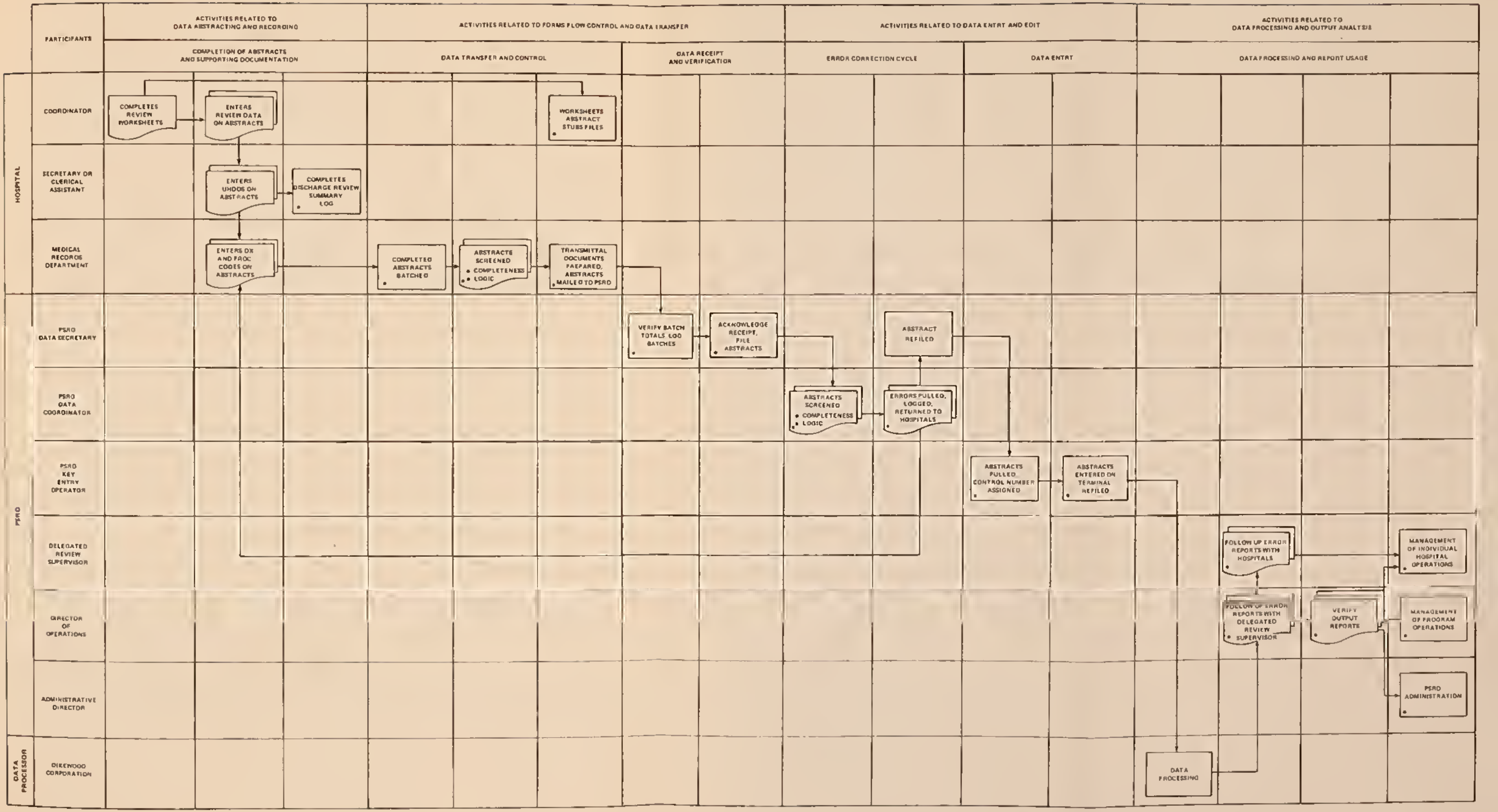
EXHIBIT C-1


PARTICIPANTS
ACTIVI
DATA ABSTRA
COMPLE
AND SUPPO
ACTIVITIES RELATED TO
DATA PROCESSING AND OUTPUT ANALYSIS
DATA PROCESSING AND REPORT USAGE
HOSPITAL
COORDINATOR
COMPLETES REVIEW WORKSHEETS
F
O
SECRETARY OR CLERICAL ASSISTANT
MEDICAL RECORDS DEPARTMENT
E
A
A
PSRO
PSRO DATA SECRETARY
PSRO DATA COORDINATOR
PSRO KEY ENTRY OPERATOR
RACTS
RED ON
MINAL,
FILED
DELEGATED REVIEW SUPERVISOR
FOLLOW UP ERROR REPORTS WITH HOSPITALS *
MANAGEMENT OF INDIVIDUAL HOSPITAL OPERATIONS *
DIRECTOR OF OPERATIONS
FOLLOW UP ERROR REPORTS WITH DELEGATED REVIEW SUPERVISOR *
VERIFY OUTPUT REPORTS *
MANAGEMENT OF PROGRAM OPERATIONS *
ADMINISTRATIVE DIRECTOR
PSRO ADMINISTRATION *
DATA PROCESSOR
DIKEWOOD CORPORATION
DATA PROCESSING

* Points of intervention of the PSRO's data quality

EXHIBIT C-1

FLOW DIAGRAM: EASTERN CONNECTICUT PSRO DATA SYSTEM


PARTICIPANTS
ACTIVITIES RELATED TO DATA ABSTRACTING AND RECORDING
ACTIVITIES RELATED TO FORMS FLOW CONTROL AND DATA TRANSFER
ACTIVITIES RELATED TO DATA ENTRY AND EDIT
ACTIVITIES RELATED TO DATA PROCESSING AND OUTPUT ANALYSIS
COMPLETION OF ABSTRACTS AND SUPPORTING DOCUMENTATION
DATA TRANSFER AND CONTROL
DATA RECEIPT AND VERIFICATION
ERROR CORRECTION CYCLE
DATA ENTRY
DATA PROCESSING AND REPORT USAGE
HOSPITAL
COORDINATOR
SECRETARY OR CLERICAL ASSISTANT
MEDICAL RECORDS DEPARTMENT
PSRO
PSRO DATA SECRETARY
PSRO DATA COORDINATOR
PSRO KEY ENTRY OPERATOR
DELEGATED REVIEW SUPERVISOR
DIRECTOR OF OPERATIONS
ADMINISTRATIVE DIRECTOR
DATA PROCESSOR
DIKEWOOD CORPORATION
COMPLETES REVIEW WORKSHEETS
ENTERS REVIEW DATA ON ABSTRACTS
WORKSHEETS ABSTRACT STUBS FILES
ENTERS UHDDS ON ABSTRACTS
COMPLETES DISCHARGE REVIEW SUMMARY LOG
ENTERS DX AND PROC CODES ON ABSTRACTS
COMPLETED ABSTRACTS BATCHED
ABSTRACTS SCREENED • COMPLETENESS • LOGIC
TRANSMITTAL DOCUMENTS PREPARED, ABSTRACTS MAILED TO PSRO
VERIFY BATCH TOTALS LOG BATCHES
ACKNOWLEDGE RECEIPT, FILE ABSTRACTS
ABSTRACTS SCREENED • COMPLETENESS • LOGIC
ERRORS PULLED, LOGGED, RETURNED TO HOSPITALS
ABSTRACT REFILED
ABSTRACTS PULLED CONTROL NUMBER ASSIGNED
ABSTRACTS ENTERED ON TERMINAL REFILED
DATA PROCESSING
FOLLOW UP ERROR REPORTS WITH HOSPITALS
FOLLOW UP ERROR REPORTS WITH DELEGATED REVIEW SUPERVISOR
VERIFY OUTPUT REPORTS
MANAGEMENT OF INDIVIDUAL HOSPITAL OPERATIONS
MANAGEMENT OF PROGRAM OPERATIONS
PSRO ADMINISTRATION

* Points of intervention of the PSRO's data quality control system

varies by hospital, but generally includes most of the UHDDS and the admitting diagnosis. Daily admission sheets show all admissions from the previous day. These include anticipated payment source for each admission, which provides a cross-check reference for the coordinators concerning all patients subject to review.

Each coordinator generates his/her own review worksheet (Exhibit C-2), which is completed as reviews are performed during the patient's stay. Each hospital had an active PSRO utilization review program, complete with forms and review procedures, prior to the implementation of PSRO delegated review, and in each hospital the existing review worksheets are still being used. The PSRO has specified a minimum set of information and documentation requirements which must be included on all worksheets to enable the PSRO to conduct its monitoring activities, and where necessary, worksheets have been modified accordingly. At a minimum, every worksheet must contain documentation for every review decision made.

Ultimately, information from all sources is assimilated on the PSRO's abstract. Each hospital employs a secretary or a clerical assistant to provide support services to the coordinator. Among other functions, these individuals complete most of the abstract for each Federal patient discharged with the exception of the review data and the diagnostic and procedures codes. Review data are recorded on the abstract only by the review coordinator. When the patient has been discharged and the abstract is complete except for diagnosis and procedure codes; the abstract is sent to Medical Records for coding.

There are several logs which serve as cross-checks to ensure that data are not lost or overlooked; most of these have come into use through the PSRO's initiative. A Statistical Log is maintained in each hospital on a daily basis for all Federal patients. Separate logs are maintained for Titles V, XVIII and XIX. These logs contain sufficient information to enable completion of the HSQB 121 when the data are summarized. In addition, when abstracts are batched for submission to the PSRO, each individual abstract is recorded on a Batch Cross-Reference Log (Exhibit C-3) which serves to document exactly which abstracts are contained in a given batch, and which facilitates recovery of a document at some point in the future, if this becomes necessary.

As a result of this supporting documentation, a four-way cross-check is made feasible for the coordinators and for the PSRO's monitoring personnel: the "active" abstracts (whether for current patients or discharged patients for whom bills must be certified) can be checked against daily admission sheets for the appropriate time period, and also against the Statistical Log and the Batch Cross-Reference log. This check of the Batch Cross-Reference log against the daily discharge sheets enables the PSRO to be reasonably sure that it receives an abstract for all Federal patients, which is difficult for many PSROs to verify. At the time an abstract is prepared for submission to the PSRO, a tear-off stub is removed from each document and can be stapled to the worksheet for that patient to verify that that abstract has been completed and submitted.

ECPSRO REVIEW WORKSHEET

EXHIBIT C-2

Ele.__________

Urg.__________

Emg.__________

Adm. Date__________

Disch. Planning__________

Date.__________

Hosp.__________

Coor.__________

2. Medical record number	39. Admission diagnosis	60. Admitting physician

61. Admission review NOT performed ○ Preadmit. certif. ○

63. ADMISSION CERTIFICATION

a. Review No.	b. Date Month Day	c. Days approved	d. Reason		f. Coordinator	g. Physician Advisor	h. PSRO norm
0 1							○

CONTINUED STAY REVIEW

	a. Review No.	b. Date Month Day	c. Days approved	d. Reason	e. Link	f. Coordinator (If not same as above)	g. Physician Advisor	h. Appeal
64	0 2							
65	0 3							
66	0 4							
67	0 5							
68	0 6							
69	0 7							
70	0 8							
71	0 9							
72	1 0							
73	1 1							

Review Date	Reason Code	Rationale	Next Review	P.A

Timeliness:__________ Appropriateness:__________

Evaluation:__________

BATCH CROSS-REFERENCE

BATCH NO. ________

DATE SENT ________

HOSPITAL ____

Page	Chart No.	Page	Chart No.	Page	Chart No.
1.		35.		68.	
2.		36.		69.	
3.		37.		70.	
4.		38.		71.	
5.		39.		72.	
6.		40.		73.	
7.		41.		74.	
8.		42.		75.	
9.		43.		76.	
10.		44.		77.	
11.		45.		78.	
12.		46.		79.	
13.		47.		80.	
14.		48.		81.	
15.		49.		82.	
16.		50.		83.	
17.		51.		84.	
18.		52.		85.	
19.		53.		86.	
20.		54.		87.	
21.		55.		88.	
22.		56.		89.	
23.		57.		90.	
24.		58.		91.	
25.		59.		92.	
26.		60.		93.	
27.		61.		94.	
28.		62.		95.	
29.		63.		96.	
30.		64.		97.	
31.		65.		98.	
32.		66.		99.	
33.					

Page	Chart No.
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
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21.	
22.	
23.	
24.	
25.	

EXHIBIT C-3

Other logs have been designed by the PSRO and are maintained for specific purposes; some are voluntarily maintained. An Ancillary Service Review Log documents all instances where ancillary charges have been reviewed and justified by a physician at the request of the fiscal intermediary. A Discharge Planning Log and a Social Service Log are currently completed voluntarily by more than half of the hospitals. These document activity and involvement with the review process by the respective departments.

The PSRO feels that the quality of its data is enhanced significantly by the emphasis which has been placed on training in coding and abstracting. Most of the hospitals in the PSRO subscribe to the PAS abstract service, and CPHA presented a coding workshop for the hospitals in the PSRO area at the time that PSRO review and data collection activities began. A short time later, the PSRO sponsored a second such workshop, which was conducted by a Registered Records Administrator. Update workshops have been conducted periodically by PSRO staff personnel, including an ART, as specific areas of difficulty have been identified. Other training activity related to both coding and abstracting is conducted on an individual hospital basis as the need arises.

The hospital-employed coordinators have an advisory group to the PSRO which meets on a monthly basis. This group suggests specific areas of training which it feels may be appropriate, and also suggests materials which might be addressed during the training session.

With respect to diagnosis and procedure coding, the PSRO has established specific procedures for the identification and sequencing of diagnostic and procedures codes. The PSRO Board of Directors determined that the attending physician should determine this information. A letter was sent from the President of the PSRO to the medical staffs of all the hospitals at the time the PSRO began its review activities. This letter advised the physicians in the area that the PSRO was required to develop profiles on each individual physician and that the PSRO intended to developed these profiles from the information generated by each physician with respect to his/her own patients. Therefore, principal and all secondary diagnoses and procedures are recorded and sequenced exactly as indicated in the medical record by the attending physician. If the Medical Records Department identifies an area of question, it is encouraged to contact the attending physician for resolution.

Activities Related to Forms Flow Control and Data Transfer

All abstracts are received and coded in the Medical Records Departments of the hospitals following patient discharge. Once coded, abstracts are batched for submission to the PSRO. Batch submission to the PSRO depends on the individual hospital's volume of Federal patients discharged. The hospital submits a batch which contains either 25 or 50 abstracts for both completeness and logic before they are submitted to the PSRO. The hospitals find this minimizes error correction at a later time and feel that the time used for screening is well spent. Before the abstracts are actually submitted, a Batch Cross-Reference Log, listing each document by medical record number, is completed. One copy of this log is included with the batch sent to the PSRO; one copy is retained in the coordinator's files. A batch cover sheet is attached to each batch sent to the PSRO (Exhibit C-4). Abstracts are mailed to the PSRO by First Class Mail.

Abstracts for patients reviewed retrospectively are handled in a similar manner, but they are batched separately from other abstracts, and have a spearate batch cover sheet.

Upon receipt by the PSRO, counts in each batch are verified against the information on the Batch Cover Sheet by the Data Secretary, who logs the batches received from the hospital (Exhibit C-5). Receipt of abstracts is acknowledged by the PSRO immediately in writing. Abstracts are then filed by batch, according to hospital number, until they can be screened.

Before abstracts are entered, they are pulled by the Data Coordinator and screened for completeness and logic. Screening for completeness involves both scanning and physically touching every required field on the abstract to insure that each field contains an entry. Screening for logic involves cross-field checks for obvious age-sex-diagnosis inconsistencies, illogical dates, questionable review data, etc. Screened abstracts are refiled to await key entry.

Errors identified during this screening process are pulled. A Request for Data Completion or Correction form (Exhibit C-6) is attached to the abstract, which is logged (Exhibit C-7) and then returned to the hospital for corrections. Abstracts containing errors are corrected and returned to the PSRO, and are checked off the PSRO's log when they are received.

At the time abstracts are to be entered into the computer, they are pulled by batch and numbered with a control number consisting of the Julian date and sequential document numbers for abstracts entered that day. The abstracts are entered by the key entry operator, and each document is marked with the operator's I.D. number when it has been entered and transmitted. The abstracts are then refiled by hospital number and are retained for a period of six months.

Activities Related to Data Processing and Output Analysis

Once the PSRO has transmitted the abstracts, Dikewood assumes responsibility for all activities until the output reports are returned. Direct monitoring of Dikewood's activities is precluded by geography, but the PSRO is satisfied with Dikewood's performance concerning edits, error messages, error correction procedures, output report generation, and adherence to confidentiality requirements. Any apparent difficulties in system operation have been brought to the attention of the processor and have been resolved quickly.

EXHIBIT C-4

ECPSRO BATCH COVER SHEET

Eastern Connecticut PSRO
Bridge Street Plaza
41 Bridge Street
Willimantic, Conn. 06226

Hospital Number ____________________

Discharge Month _____ Year _____

Batch Number ____________________

Number of Abstracts in This Batch ____________

Cumulative Total of Abstracts for this Month ____________

Comments:

Signature ____________________________

Date ____________________________

ECPSRO - RM Form # 14a

INCOMING ABSTRACTS LOG

EXHIBIT C-5

HOSPITAL	#100	#200	#300	#400	#500	#600	#700
Abstracts							
Month Completion							
Review Summary							
Ancillary Services							
Discharge Planning							
Abstracts							
Month Completion							
Review Summary							
Ancillary Services							
Discharge Planning							
Abstracts							
Month Completion							
Review Summary							
Ancillary Services							
Discharge Planning							

EXHIBIT C-6

Eastern Connecticut PSRO
Request for Data Completion or Correction

Dear ____________________,

Please correct or complete the attached data worksheet and return it with this form to the ECPSRO office as soon as possible. Thank you.

Hospital _______ Month _______ Batch _______ Page # ____________________ Chart # __________

Problem(s): ____

____

____

HOSPITAL COMPLETES:

Corrected by ____________________________ (date) ____________

Remarks: ____

____

ECPSRO COMPLETES:

Problem identified ______19__

by ________________________

ECPSRO RM Form #12

Eastern Connecticut PSRO
Request for Data Completion or Correction

Dear ____________________,

Please correct or complete the attached data worksheet and return it with this form to the ECPSRO office as soon as possible. Thank you.

Hospital _______ Month _______ Batch _______ Page # ____________________ Chart# __________

Problem(s): ____

____

____

HOSPITAL COMPLETES:

Corrected by ____________________________(date) ____________

Remarks: ____

____

ECPSRO COMPLETES:

Problem identified ______19__

by ________________________

ECPSRO RM Form #12

Eastern Connecticut PSRO
Request for Data Completion or Correction

Dear ____________________,

Please correct or complete the attached data worksheet and return it with this form to the ECPSRO office as soon as possible. Thank you.

Hospital _______ Month _______ Batch _______ Page # ____________________ Chart# __________

Problem(s): ____

____

____

HOSPITAL COMPLETES:

Corrected by ____________________________(date) ____________

Remarks: ____

____

ECPSRO COMPLETES:

Problem identified ______19__

by ________________________

ECPSRO RM Form #12

EXHIBIT C-7

LIST OF ABSTRACTS REMOVED FROM BATCH

Hospital________________

Batch for__________197 __

Batch________________

Control Number	Page	Medical Record Number	Discharge Date	New Location	Reason for Removing

ECPSRO RM Form # 13

DATA QUALITY CONTROL SYSTEM

The data quality control system established by the Eastern Connecticut PSRO addresses data quality at each step from admission until the data are entered into the computer. There are several significant quality control activities which enable the PSRO to assure itself of such factors as:

- The PSRO receives an abstract for each Federal patient
- The information recorded on the abstract is accurate, complete, and timely
- Any abstract can be located at any point in time.

Quality Control Activities Related to Data Abstracting and Recording

As discussed previously, the PSRO places significant emphasis on training and has found that this emphasis results in both a more thorough understanding of the design and operation of the data system and more effective collection of PSRO data at the hospital level. Routine procedures, abstracting instructions, coding conventions, and other information are included in the General Forms Instruction Manual which is issued to each coordinator. Periodic procedure memos are issued as necessary by the PSRO, and these are filed routinely in the coordinator's manuals.

All abstracts in each hospital are routed to Medical Records for completion and submission to the PSRO. The Secretary or other support personnel in each hospital is responsible for assuring that an abstract is initiated for each Federal patient admitted as indicated on the daily admission sheets. The coordinator has the final check on this factor and can check abstracts against the daily admission sheets, the Statistical and Batch-Control logs, and the bills certified to verify that there is an abstract for each Federal patient. The patients reviewed are checked off both the daily admission and discharge lists. Certification slips are attached to each bill; the hospitals understand the significance of having supporting documentation for all certifications of medical necessity.

Abstract screening procedures vary by hospital, but all hospitals have someone who screens abstracts for completeness and logic before the abstracts are submitted to the PSRO. This screening has had a significant effect on the number of abstracts with errors returned to the hospitals. The logs and the batching and screening procedures assure that abstracts are generated for all Federal patients, that no abstracts are lost within the hospital, and that the abstracts are as accurate as possible when they are submitted to the PSRO.

In addition to these procedures, PSRO personnel perform two types of monitoring to help assure the quality of the data collected. The PSRO's concurrent monitoring program is conducted by the Delegated Review Supervisor, and combines monitoring of the review process in each hospital with review of data collection activities within that hospital. The PSRO's retrospective monitoring program is conducted by the Data Coordinator and addresses the quality of the coding and abstracting of PSRO data (Exhibit C-8).

Concurrent monitoring is performed twice per month in each hospital. There are specific written procedures for concurrent review evaluation which are to be followed. The Delegated Review Supervisor visits the coordinator in the morning and works with the coordinator all day, performing exactly the same work, and preparing all abstracts and supporting documentation in the same manner as the coordinators. A number of monitoring forms are completed (Exhibits C-9 through C-13), documenting the manner in which the review activities were performed, whether deficiencies observed were attributed to knowledge or performance, the manner in which Physician Advisors are involved, and an analysis of all apparent deficiencies identified.

At the end of the day the results of the data collected are not compared with the coordinator's data. The Delegated Review Supervisor returns to the PSRO and subsequently compares the abstracts submitted by the coordinator with those generated during the monitoring process. Difficulties identified have been documented carefully and then pursued informally with each coordinator on an individual hospital basis. The PSRO is finding that with the full implementation of its data system and the availability of hard data for monitoring purposes, it may now be required to document more formally the results of its findings to someone in administration in each hospital. The PSRO is concerned that such an alternative not jeopardize its established informal relationships with the coordinators. Resolution of this issue is pending, and its possible effect on the quality of the data collected is uncertain.

Retrospective monitoring is performed on-site in each hospital once per calendar quarter by the PSRO's Data Coordinator who is an A.R.T. The Data Coordinator takes special monitoring forms to the hospital and requests 15 records pulled at random (perhaps 15 records whose medical record number ends in "5"). She re-abstracts everything on the PSRO's abstract except the physician codes (the hospitals are responsible for ensuring that their physicians are identified accurately) and the review data (review data are monitored concurrently). The re-abstracting is checked before the Data Coordinator leaves the hospital, to help assure the accuracy of the re-abstracted documents.

The Data Coordinator then returns to the PSRO, pulls the same abstracts from its files, and compares her re-abstracting with the originals. Discrepancies are discussed with the hospital to determine if an error has been made and to discuss any difficulties identified. Numerous coding errors were found early in the re-abstracting process, but such errors are decreasing rapidly and now probably do not exceed four percent. The Data Coordinator seeks patterns of error during her re-abstracting

EXHIBIT C-8

EASTERN CONNECTICUT PSRO

DATA MONITORING - CODING

HOSPITAL # ______________ MONITORING DATE ______________ REVIEW QUARTER ______________

VALIDATION OF MEDICAL RECORD #: ________________________________

VALIDATION OF PAYMENT SOURCE #: ________________________________

DIAGNOSIS:	CODE:	CODE ON FORM:

PROCEDURE:	CODE:	CODE ON FORM:

ECPSRO RM form 7e

EXHIBIT C-9

EASTERN CONNECTICUT PSRO, INC.

CONCURRENT REVIEW ACTIVITIES EVALUATION REPORT

HOSPITAL:______________________ DATE:______________________

TOTAL FEDERAL PATIENTS:______________ TOTAL REVIEWED:______________

1. Availability of:

○ a. Patient Charts ○ c. ECPSRO Abstract

○ b. UR Worksheets ○ d. Federal Census Report

	NO PROBLEM	PROBLEM	KNOWLEDGE	PERFORMANCE
1. Codes - Admission Diagnosis				
2. ECPSRO Approved Norms				
3. Initial Length-of-Stay Assignment				
4. Timeliness of Admission Certification				
5. Use of "Level of Care" for CSR				
6. Codes - Additional diagnosis, procedures or complications				
7. Referrals to PA by UR Coordinator				
8. Reason Codes				
9. Abstracting				

Appropriateness of Ancillary Services in terms of conformance with pre-established Quality of Care guidelines.

____

____

____

____

COMMENTS:

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ECPSRO RM FORM # 17

____

Delegated Review Supervisor

EXHIBIT C-10

MONITORING EVALUATION

Hospital ____________ Date ____________ Monitor ____________

	No.	%	Comments	Problem No	 Yes
Cases Monitored					
Sample Type (random/biased)					
Mean LOS					
Timely Admission Review					
Mean Initial Days Certified					
Admission Criteria Documented					
Vague Diagnosis on Admission					
Reviewed by PA on Admission					
Continued Stay Reviews					
Total Days of Stay Extended					
Total Administratively Necessary Days					
CSRs Reviewed by PA					
Admission Certifications					
Continued Stay Reviews					

Problem Code:

K Knowledge
P Performance
R Review

ECPSRO-RM Form # 7c

EXHIBIT C-11

MONITORING EVALUATION

HOSPITAL

	JAN No.	FEB No.	MAR No.	APR No.	MAY No.	JUN No.	JUL No.	AUG No.	SEP No.	OCT No.	NOV No.	DEC No.
Cases Monitored												
Sample Type (random/biased)												
Mean LOS												
Timely Admission Review												
Mean Initial Days Certified												
Admission Criteria Documented												
Vague Diagnosis on Admission												
Reviewed by PA on Admission												
Continued Stay Reviews												
Total Days of Stay Extended												
Total Administratively Nec.Days												
CRSs Reviewed by PA												
Admission Certifications												
Continued Stay Reviews												

ECPSRO-Rm Form # 7d

HOSPITAL MONITORING CHECKLIST

DEFICIENCY ANALYSIS

	Chart Number	Cert.-Adm.		CSR		COMMENTS
		Yes	No	Yes	No	

ECPSRO-RM Form #7b

EXHIBIT C-12

EXHIBIT C-13

ECPSRO MCE COMMITTEE

PHYSICIAN ADVISOR MONITORING FORM

Hospital # ______________ Date Monitored ______________

Admission Review ○ Continued Stay Review ○

Date Referred ______________ to Physician Advisor # ______________

Diagnosis on Admission ______________

Age of Patient ______________ Referral # ______________

Diagnosis at time of Referral ______________

____

Reason Referred: ______________

____

Complications: ______________

____

Date of Response ______________ Days Approved ______________

Reason Approved: ______________

____

Documentation Supporting Decision

A. Orders
B. Consults
C. Progress Notes
D. Lab Reports
E. X-Rays
F. EKG Reports
G. Other ______________

Reasons Denied: ______________

____

Attending Contacted yes ○ no ○

Date of Denial Letter ______________

Date Reviewed by MCE Committee ______________

Committee Decision ______________

____

____

Action ______________

____

______________ M.D.
Signature of Chairman

ECPSRO RM Form #15

and verification activities and has been able to identify cross-field logic inconsistencies, coding from the alphabetic index alone (rather than using the tabular index also) and other problems. Follow-up training programs will be developed as required by the difficulties identified.

The PSRO is generally pleased with its monitoring programs, but has has some credibility issues to resolve. The Delegated Review Supervisor has four years of review (and coding and abstracting) experience, but had credibility problems with Medical Records personnel. The Data Coordinator is an A.R.T. with eight years of coding experience, but had some credibility problems with coordinators. Most of these difficulties have now been resolved.

Finally, the PSRO monitors the quality of abstract completion through the output reports received from Dikewood. Error reports are examined for patterns of error in individual hospitals and across the PSRO area. Errors which cannot be resolved at the PSRO level are returned to the hospital for correction. Reason code reports are examined to determine the extent to which coordinators apparently understand and document the review process accurately. The lag report and other management reports are used to monitor the timeliness of data submission.

Quality Control Activities Related to Forms Control and Data Transfer

Many of the quality control activities in this area are among these activities described in the Data System section. The quality control activities have been integrated rather thoroughly into the on-going operation of the data system.

Upon receipt by the PSRO, abstracts are immediately counted by the Data Secretary and batch totals are verified. Any discrepancies are resolved with the hospital immediately. Since both parties have the Batch Cross-Reference Log (Exhibit C-3), missing documents can be identified quickly.

Batches received are logged by hospital on an Incoming Abstracts log (Exhibit C-5), which shows the date and the number of documents received. The final batch from a given month is headed by a month completion form (Exhibit C-14) so the PSRO knows when each hospital has submitted all abstracts from a given month, which also facilitates monitoring of timeliness. At the same time, a card is sent to the hospital, notifying them of the date, batch number(s) received, and number of documents. This allows the hospitals to verify that no documents are lost in transit. Similarly, the PSRO monitors total documents submitted each month by hospital from the Incoming Abstracts Log and a Batch Control Form (Exhibit C-15) showing each batch received from each hospital. If actual submissions vary significantly from the expected totals, the PSRO initiates an inquiry.

EXHIBIT C-14

ECPSRO MONTH COMPLETION FORM

Eastern Connecticut PSRO
Bridge Street Plaza
41 Bridge Street
Willimantic, Conn. 06226

Part 1 Completed by Chief, Medical Record Department or Utilization Review Coordinator.

TO ECPSRO

FROM Hospital ______________________ ECPSRO Hospital Number ______________________

Month ______________ Year ________ Completion Date

____
Day Month Year

Total Abstracts ______________________

Total number of batches this month __________

Signed ______________________________
Chief, Medical Record Department or
Utilization Review Coordinator

ECPSRO - RM Form # 14b

EXHIBIT C-15

ECPSRO BATCH CONTROL FORM

Eastern Connecticut PSRO
Bridge Street Plaza
41 Bridge Street
Willimantic, Conn. 06226

Batch	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.	Date	No.
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

ECPSRO - RM Form # 14c

Prior to data entry all abstracts are screened by the Data Coordinator. Screening procedures involve physically touching all fields on the abstract in which an entry is required, and a number of cross-field logic checks. In instances where coding is suspect, the Data Coordinator may check all codes in a given batch for reasonableness and legitimacy of codes, consistency between diagnostic and procedure codes, etc. A list is maintained of all abstracts removed from a batch for any reason, showing both the reason and the new location of the abstract. Documents with errors may be corrected at the PSRO, but are usually logged and returned to the hospitals. A Request for Data Completion or Correction form is attached to the abstract indicating the specific question or error. When error corrections are returned by the hospitals they are checked off the log and filed for data entry.

When abstracts are pulled for data entry, they are assigned a control number consisting of Julian date and document number on the date entered, which facilitates recalling individual documents from the computer. Each document is marked with the operator's I.D. number so that a number of abstracts can be scanned quickly to verify that they have all been entered.

Quality Control Activities Related to Data Processing and Output Analysis

This is the only area of the PSRO's quality control system for which there are no detailed written procedures, although this is routinely monitored by the PSRO. The data system developed for the PSRO was tested by Dikewood with 50 "dummy" abstracts containing known errors. The output from the test was examined carefully to assure that error conditions had been identified.

Subsequently, the PSRO has monitored the output reports for reasonableness and periodically checks report totals against totals from the PSRO's Incoming Abstracts Log and the hospital's Statistical Logs. Where areas of apparent difficulty have been identified, these have been discussed with Dikewood, and problem areas have been resolved; where necessary, reports have been re-run.

Error reports are received routinely twice each month, and other reports are received on a monthly and quarterly basis. The PSRO knows when reports are due and initiates telephone communication if reports are tardy for any reason.

SUMMARY

The data quality control system developed by the Eastern Connecticut PSRO is very comprehensive and assures the PSRO of control over data-related activities from the time the patient is admitted until the output reports are received by the processor. The quality control program places significant emphasis on training for all personnel involved in data activities, and all personnel understand both the objectives and the operation of the system. The PSRO can verify that it receives an abstract for all Federal patients, understands how coding and abstracting are performed in each hospital, can locate any abstract at any point in time, and can monitor the accuracy and timeliness of all data-related activities.

APPENDIX D

CASE STUDY

NEW YORK COUNTY HEALTH SERVICES REVIEW ORGANIZATION

Preface

The following case study describes the data system and the data quality control program developed by the New York County Health Services Review Organization to control the collection and processing of the PHDDS and optional data elements in this PSRO area. In many respects this case will be particularly useful to PSROs, especially where a high volume of Federal patients discharged is involved: this PSRO will eventually review some 250,000 Federal patients discharged each year, which places it among the largest PSROs in the nation.

We are indebted to the New York County Health Services Review Organization for its support and cooperation in this data quality control endeavor, and especially to Eleanore Rothenberg, Ph.D., Executive Director; David Schimel, Manager of the Data Division; and Elaine Remmlinger, Data Analyst for their time and assistance, without which preparation and presentation of this case study would not have been possible.

In addition, special thanks are due to these individuals, as well as Roger H. Steinhardt, M.D., Medical Director, and Shu-Ping May Lan, Data Analyst for permitting us to reference and describe the Data Quality Assurance Monitoring Plan which they have developed. This plan represents some of the foremost thinking in the area of quality control of PSRO data.

CASE STUDY

PSRO New York County Health Services Review Organization

PSRO Personnel Involved In Data Activities

Roger H. Steinhardt, M.D., Medical Director
Eleanore Rothenberg, Ph.D., Executive Director
David Schimel, Director, Data Division
Elaine Remmlinger, Data Analyst
Shu-Ping May Lan, Biostatistician
5 Additional Data Analysts
6 Abstractors (in non-delegated hospitals)

ENVIRONMENT

The New York County Health Services Review Organization encompasses 36 hospitals throughout Manhattan, which discharge more than 250,000 Federal patients discharged each year. To date, PSRO review has been implemented in 20 of these hospitals, and 14 of the hospitals are delegated. Each hospital completes the PSRO's data collection abstract, which is forwarded directly to the processor for data entry. The PSRO's data processing contractor is the Dikewood Corporation.

DATA SYSTEM

NYCHSRO's data system is noted for the extent to which quality control functions have been integrated into routine system operations.

Activities Related to Data Abstracting and Recording

The manner on which data are aggregated for recording on the PSRO abstract varies widely by hospital throughout the PSRO area. The sociologic data in the UHDDS is collected primarily from the face sheet and the medical record. Review data are transcribed from information on coordinator's worksheets, and optional items are taken both from worksheets and the medical record. In non-delegated hospitals, abstracts are completed by abstractors who have Medical Record degrees or experience, and who have been hired and trained specifically for this purpose. In delegated hospitals, either the coordinators complete the entire abstract, except for codes, and forward the abstract to the Medical Records Department for coding, or the coordinators forward the review data to abstractors, who complete the entire document. In three hospitals a facsimile of the PSRO's abstract is generated from an in-house computer and transmitted to abstractors, who complete any fields for which the computer did not have information. The PSRO attempts to gain an understanding, prior to delegation, of the data flow in each hospital, and of the personnel involved in data related processes.

The PSRO provides training for all persons performing abstracting functions; this is required of PSRO employees, and as a hospital delegation criterion. On going training sessions for continuing education purposes are conducted periodically, and these address data subjects on an as-needed basis. Continuing education can also be conducted when NYCHSRO staff visits hospitals, which will be discussed shortly. NYCHSRO does not conduct training in coding, and the PSRO hopes that personnel employed by hospitals for this purpose hold at least an A.R.T. degree.

The PSRO requires that information and review activities be documented on a worksheet. The forms used vary between hospitals, although the PSRO requires sufficient information to support review, abstracting, and monitoring. The PSRO's worksheet is used in all non-delegated hospitals. The PSRO suggests to its hospitals that the permanent file or worksheets for discharged patients be maintained separately from the medical records for purposes of confidentiality.

Activities Related to Forms Flow Control and Data Transfer

Completed abstracts are screened and batched in the hospital and are collected once every two weeks. Most hospitals perform some type of abstract screening, although this varies between hospitals. Abstracts are screened a second time by a PSRO Data Coordinator/Analyst, who visits each hospital every two weeks, on the day before abstracts are to be collected from that hospital. The Data Coordinator looks for omissions, coding errors, and obvious inconsistencies. The next day, completed batches are collected by a bonded courier and delivered to Dikewood's New York Office.

The PSRO requires that abstracts be completed within one month of discharge. Some hospitals, especially large teaching institutions, had difficulties with this time constraint initially, but the PSRO staff has worked with the hospitals on an individual basis, and currently only two hospitals are encountering significant problems in this area. Timeliness problems are found to occur primarily because of late completion of the medical record, or because of a backlog of abstracts in the Medical Records Department.

When abstracts are received at Dikewood's office, the batch totals are verified, and abstracts are batched for data entry. Discrepancies in batch totals are communicated to the PSRO, which contacts the hospital. The abstract forms are pre-numbered, and the batch header sheet lists each document included in that batch; thus, missing documents can be identified by the processor, and this information can be relayed to the hospital. Copies of the Discharge Abstracts Batch Log and the Discharge Abstracts Transmittal Form are included as Exhibits D-1 and D-2 on the following pages. The PSRO serves as the interface for all communication between the three organizations, and the processor does not have direct contract with the hospitals. The PSRO receives a report every other Monday on the collection of documents the preceding Thursday and Friday. The format for this report is shown in Exhibit D-3.

NEW YORK COUNTY HEALTH SERVICES REVIEW ORGANIZATION

DISCHARGE ABSTRACTS BATCH-LOG

Exhibit D-1

Hospital ______________________________ Date ______________

Batch Month _______________ No. of Documents ___ Signature ___________

Batch Number ______________

	NYCHSRO Document No.	Patient's Last and First Name	Medical Record No.	Year 197__		LOS. Appr.
				Adm. Date	Disch. Date	
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						
24.						
25.						

NEW YORK COUNTY HEALTH SERVICES REVIEW ORGANIZATION

DISCHARGE ABSTRACTS TRANSMITTAL FORM

Exhibit D-2

Hospital ____________________

Batch-Month ____________________ Date ____________________

Signature ____________________

Batch Number	Number of Documents	NOT FOR HOSPITAL USE Count on Receipt	Discrepancy Reconciled	Initials
1			/ /	
2			/ /	
3			/ /	
4			/ /	
5			/ /	
6			/ /	
7			/ /	
8			/ /	
9			/ /	
10			/ /	
11			/ /	
12			/ /	
13			/ /	
14			/ /	
15			/ /	
16			/ /	
TOTAL BATCHES			/ /	

ERROR REPORTS RETURNED	Dates Entered		Pages Returned	Pages Missing
#	From: / /	To: / /		
#	/ /	/ /		
#	/ /	/ /		

Received by: ____________________ Date ____________________

NEW YORK COUNTY HEALTH SERVICES REVIEW ORGANIZATION

DIKEWOOD COURIER PICKUP AND DELIVERY REPORTS*

Exhibit D-3

Hospital	Pickup Date	Batch Nos.	No. Doc. Rec'd.	Date of Error Reports	
				Delivered	Returned
Total					

Date of this report ____________

*Due on Monday following each pickup/delivery

Activities Related to Data Processing and Output Analysis

Once the abstracts have been delivered to Dikewood, they perform all functions until the output reports are produced. Edit messages encountered during data entry are verified to be other than keying errors, and are then overriden by the Dikewood key entry operators, and these messages appear on the regular error reports. Error conditions which prohibit entry into the file, such as a duplicate document number or an invalid hospital number, are relayed immediately to the PSRO, and are resolved by telephone with the hospital. Keyed abstracts are not returned to the PSRO but are filed in secure files at Dikewood's office, by hospital, by month, and by batch.

Error reports are produced in triplicate every two weeks. The original is sent to the hospital, and corrections are made on the report, which is then returned. Copies of the report are retained by the PSRO and by Dikewood, so that they are aware of the status of error corrections, and so the PSRO can identify patterns of error and possible areas where continuing training efforts may be required.

DATA QUALITY CONTROL SYSTEM

The data quality assurance system developed by NYCHSRO is designed to assure the accuracy of the data generated in each hospital in the PSRO area. Other PSRO data quality control activities provide assurance that PSRO data are collected for each Federal patient and that abstracts can be located at any time.

It should be noted that NYCHSRO has separate Data and Hospital Review Departments, and that these departments interface with the hospitals separately; monitoring of review processes and activities is the function of the Hospital Review Department, and it performs this monitoring independently of the Data Division. Where activities or difficulties in a hospital obviously transcend both areas, the two departments attempt to resolve the issue together.

Quality Control Activities Related to Data Abstracting and Recording

Quality control related to the collection of data at the hospital level begins with the training programs described earlier. The PSRO requires training of all personnel performing coding and abstracting functions and attempts to assure that personnel performing coding functions are qualified in that field.

Most delegated hospitals in the PSRO area perform all patient review, which essentially insures that all Federal patients are reviewed. The admission listings at all hospitals show the financial status and expected payment source for each admission, and the personnel with review or support responsibilities examine these lists to verify that review and data collection activities have been initiated for each Federal patient.

This check is also performed by PSRO monitoring personnel (from the Hospital Review Department), who identify a random sample of Federal patients from previous admission listings and verify that abstracts are completed for these patients. They also check to assure that abstracts for all active patients are in an active patient file, that abstracts for patients recently discharged are in a "bill-pending" or similar file, and that it is generally possible to locate any abstract at any time.

Finally, a Monthly Status Report on Data Abstracting is prepared by the Data Division for use by the senior staff. This report shows the current status of abstracting activities at each hospital, including any accumulated backlog and need for assistance from the PSRO. Where problems exist, the reason for the problem, breakdown of the backlog by month of discharge, and payment status is provided. Recommended actions, and the projected situation and actions during the coming month are included.

Emphasis is placed on assuring the quality of abstracted data before the abstracts leave the hospital. Most hospitals have a screening process for review of abstracts in order to minimize the effort which results later when the error reports are produced. In addition, every two weeks a PSRO Data Coordinator/Analyst visits each hospital on the day before abstracts are collected by the Dikewood courier. The Data Coordinator/Analyst reviews all abstracts to be submitted, looking for omissions, coding errors, and any obvious inconsistencies. In addition, NYCHSRO has developed a sophisticated retrospective re-abstracting plan designed to yield statistically significant conclusions about data quality. The following discussion, while brief, summarizes the key aspects of this plan. Because of space limitations, none of the statistical calculations through which the parameters and standards were determined have been included.

Data Quality Assurance Monitoring Plan

The data quality assurance monitoring plan developed by NYCHSRO provides for quarterly retrospective monitoring of PSRO data to identify errors committed at the hospital, by the data abstractor, or at the data entry facility by the data processor. A statistical sampling methodology was developed for item selection which is expected to yield assurances that the actual error rate in the PSRO's data is not greater than one percent.

The actual data verification process concerning activities in the hospital involves visual screening in the hospital, by a NYCHSRO Data Coordinator/Analyst, of the original abstract submitted by the hospital against the original source documents (the medical record and the coordinator's worksheet). This is not the bi-weekly screening conducted before documents are transmitted to Dikewood. The only exception to this procedure occurs for diagnostic and procedure codes, which are re-coded by the Data Analyst from the medical record and then checked against the information reported on the abstract. A computer print-out of the documents to be reviewed is obtained from Dikewood, and comparison of this report, the abstract, and the source documents reveals which errors occurred during the data entry process. Monitoring forms are used to record all errors identified, and will ultimately be used to calculate the quality of the data from each hospital.

Analysis of the findings of this process is facilitated by classification of types of errors and by the definition of levels of significance for data items. Errors are classified as omission of transcriptional. Diagnostic and procedure coding errors are classified as "marginal" or "significant." Data items are categorized into three levels of significance, depending on the effect that an error in the given element would have on the reliability and validity of the profiles and norms to be developed.

The PSRO requires 95 percent confidence level concerning the acceptance of hospitals whose error rates do, in fact, fall below one percent. Different confidence limits were examined with respect to sample sizes for monitoring, and sample sizes will be selected by volume of Federal beneficiaries discharged, as follows:

- In hospitals with 1,500 more discharges during a three-month period, 100 cases are to be reviewed

- In hospitals with 750-1,499 discharges during a three-month period, 75 cases are to be reviewed

- In hospitals with fewer than 750 discharges during a three-month period, 50 cases are to be reviewed.

Acceptance or rejection of the quality of the data is based on the number of documents sampled which contain errors. Options of sample size relating to the desired confidence limits were examined, and acceptance numbers (the maximum number of errors in a sample with which the quality of the data from that hospital will still be accepted) and rejection numbers (the minimum number of errors for which the quality of the data from that hospital will be rejected) for each category of sample sizes were identified. The quality control program is to be conducted in the manner described above. Where problem areas are identified, the PSRO will implement remedial training activities.

Quality Control Activities Related to Forms Flow Control and Data Transfer

Quality control concerning the transfer of PSRO data begins in the hospital with the Discharge Abstract Batch Log (Exhibit D-1), which is a cumulative list of all abstracts within a given batch becomes the batch-header sheet for that batch. A Discharge Abstracts Transmittal Form (Exhibit D-2) lists all batches collected from a given hospital at one time, and is signed by the courier who collects the documents. Copies of both forms are retained in the hospitals. Dikewood checks all batch totals on receipt and verifies the number of documents received.

When abstracts are received at Dikewood, the totals are verified, abstracts are batched for data entry, and a NYCHSRO Abstract Control Log Sheet (Exhibit D-4) is attached to the batch folder. The number of batches received and the total number of abstracts included are entered on a continuous log, the Hospital Summary Log Sheet, by hospital (Exhibit D-5). Any discrepancies between batch totals or abstract totals are referred immediately to the PSRO, which resolves the problem with the hospital.

Quality Control Activities Related to Data Processing and Output Analysis

When completed batches are ready for keying, the batch number is entered and re-entered to insure accuracy, and the abstracts are entered. At the end of the batch, the total number of documents shown on the Abstract Control Log is verified against the total shown on the terminal, to insure that none were omitted. Any error messages which appear on the terminal at this point are overriden by the key entry operator, unless they prevent access to any file (such as a duplicate document number or an invalid hospital number), in which case the PSRO is contacted immediately and resolves the question with the hospital.

Error reports resulting from this point of entry are usually generated within two weeks of the time of input. Error reports are printed from the printer in Dikewood's New York Office. They are sent to the PSRO for approval, and are then transmitted directly to the hospitals for corrections. Corrections are made on the error reports, and are returned to the PSRO for re-submittal to Dikewood.

On an on-going basis, the PSRO monitors the timeliness and validity of reporting requirements, as well as the accuracy of the data entry operation. Any errors or difficulties with deliverables are brought to the attention of the processor, which makes the appropriate corrections.

SUMMARY

The data quality control system developed by the New York County Health Services Review Organization apparently addresses the data control needs of this high volume PSRO quite well. The most significant data problems encountered by the PSRO on an on-going basis is timeliness and backlogs of abstracts in some hospitals. The PSRO is able to track abstracts throughout the data system, and can be reasonably sure that it receives an abstract for all Federal patients in a given hospital. Of special note is the data quality assurance monitoring plan, which will provide the PSRO with highly reliable assurances that the data accuracy rate in any given hospital does or does not fall within the limits of acceptable performance established by the PSRO.

NYCHSRO ABSTRACT CONTROL LOG SHEET

(Attach to Batch Folder) Exhibit D-4

Month/Batch _ _/_ _ _

Exceptions

Date: _ _/_ _/_ _

Total in Batch ________________________ _ _ _ _ _ _ _ _ _

_ _ _ _ _ _ _ _ _

BY: ____

DATA ENTRY ________ Initials

Date Entry Finished: _ _/_ _/_ _

Total Entered ________________________

No. with Errors ______________________

DOCUMENT CONTROL ________ Initials

Date: _ _/_ _/_ _

Total Received ________________________

Exceptions and Reason

______ Number ________________________ Reason

______ Number ________________________ Reason

______ Number ________________________ Reason

______ Number ________________________ Reason

NYCHSRO

HOSPITAL SUMMARY LOG SHEET

Exhibit D-5

(Hospital Name)

Hospital Control		PSRO Abstracts Batch				Sent to Data Entry	Returned From Data Entry
Batch #	Count	Julian Date	From	To	Total		
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__
_ _ _	_ _ _	_ _ _ _	_ _ _ _	_ _ _ _	( )	__ __/__/__	__ __/__/__

(Document Control File)

APPENDIX E

CASE STUDY
SOUTH CAROLINA MEDICAL CARE FOUNDATION

Preface

The following case study describes the data system and data quality control procedures developed by the South Carolina Medical Care Foundation to control the collection and processing of the PHDDS and optional data elements in the PSRO area.

We are indebted to the South Carolina Medical Care Foundation for its support and cooperation in the effort to develop a data quality control system which will be useful to all PSROs. In particular, we wish to thank William F. Mahon, Executive Director and Carolyn S. Lipp, PSRO Data Manager, without whose assistance preparation of this case study would not have been possible.

QUALITY CONTROL PERSONNEL

Carolyn Lipp, A.R.T. -- Data Manager
Malinda Anderson - Data Clerk
. Manual screening of all abstracts
Tony Stokes, R.R.A. -- Program Surveyor
. Validation Survey Team member
Sylvia Harrison, R.N. -- Program Surveyor
. Validation Survey Team member

ENVIRONMENT

The South Carolina Medical Care Foundation is a statewide PSRO that currently performs review on Federal patients only except for a pilot project in three hospitals where Blue Cross patients are reviewed. There are 74 hospitals in the State of which 69 are under review (the other five do not admit Federal patients). Of the 69 hospitals, 33 are delegated for concurrent review. The PSRO abstract is used in all of the hospitals under review; the activities of data collectors are not integrated into the PSRO's system (about 70 percent of the discharges in the State are covered by PAS). South Carolina has about 130,000 Federal patients discharged per year. The PSRO's data processor is Blue Cross/ Blue Shield of South Carolina.

The most recent data tape (January -- March 1977) submitted to HSQB was reported by the Federal processor to have a 0.0 percent error rate (using PSRO Transmittal No. 28 edit checks) based upon 33,700 records.

GENERAL DATA SYSTEM

Data Abstracting and Recording

In all hospitals, the admitting office sends a daily list of the previous day's admission to the Review Coordinator. This daily list includes the patient name, room number, attending physician's name, pay source and (usually) the medical record number. The list does not have a standard format. The Review Coordinator locates the medical record on the floor and records social and demographic information onto the abstract. The Review Coordinator verifies the surgery schedule with the medical record and codes the admitting diagnosis and procedure onto the abstract. Performance of admission review is in accordance with a manual developed by the PSRO and used by all hospitals. The Review Coordinator is required to maintain a worksheet thoroughly documenting the review process. This support includes documentation supporting ancillary charges and Physician Advisor activity (the PA must record his/her activities on the worksheet).

The Review Coordinator files the worksheet/abstract form set in a tickler file. Continued stay review is instigated by the file and performed as described above.

Upon patient discharge, the medical record is routed to the hospital Medical Records Department. There, the diagnoses and procedures on the face sheet are coded and a copy is sent to the Review Coordinator.

The Review Coordinator receives a daily discharge listing. This is used to assure that all Federal patients have undergone complete review. The daily discharge listings are maintained in a notebook. Additionally, the Review Coordinator must certify the bill for payment. Since local PSRO policy requires that the worksheet, abstract, and bill be simultaneously examined for comparability, the abstract cannot be submitted until the bill is prepared and certified.

Retrospective review is performed in essentially the same fashion as concurrent review: the chart is retrieved and reviewed as if the patient were still in the hospital. The Review Coordinator still makes level of care determinations and still must certify the bill for payment. The only difference is that the PSRO cannot terminate benefits (make retrospective denials). The Review Coordinator assigns Acute Certified Days only as those deemed medically necessary by the standard review process, not necessarily the actual length of stay that appears on the chart. For Medicare and Medicaid patients, differences between the two are paid as administratively necessary days.

Forms Flow Control and Data Transfer

Abstracts are mailed from the hospital to the PSRO every Friday. The Review Coordinator keeps the worksheet; these are filed alphabetically by patient name for two years. There is no second copy of the abstract; the coordinator worksheet is the second copy of the data set. If the coordinator wishes to retain a copy of the abstract, she makes a photocopy; however, most coordinators have found no need to retain a copy.

In small non-delegated hospitals where a full time coordinator is not required, the PSRO reimburses that facility on a per-abstract basis utilizing a formula whereby the coordinator's existing salary, fringes, space, supplies, postage, and telephone are considered in establishing the rate per abstract. This rate will vary from facility to facility. Batch control slips (Exhibit E-1) accompany batches only from those hospitals receiving reimbursement for review. These slips are validated by the Data Clerk and forwarded to the PSRO Controller for payment to the hospital.

The PSRO maintains a weekly log, by hospital, indicating the number of abstracts submitted, the number with errors, the number of error documents recieved, the number of error documents with errors and the weekly error percentage. This weekly log is generated by the data processor. The

Exhibit E-1

PSRO

ABSTRACT CONTROL SHEET

For period from ________________________ to _______________________

Total number of Abstracts in this batch __________________________

Co-ordinators signature: ____________________________________

hospitals are required to submit their total number of Federal beneficiaries discharged to the PSRO on a quarterly basis (Exhibit E-2). This allows the PSRO to compare the number of discharges to the number of abstracts received. Discrepancies are then forwarded to the PSRO Lead Coordinator for investigation. Additionally, this comparison is utilized by the Validation Survey Team (see below) on a semi-annual basis when monitoring visits occur at the hospital. Since the hospitals maintain the daily discharge listings in a notebook, discrepancies between the number submitted by the hospital and the number counted by the processor can be validated. If a discrepancy is detected, the hospital can request (through the PSRO) a complete listing of the discharge records received and counted by the processor for the period in question. The hospital can then note what names are missing from the listing and take steps to (re) submit those abstracts. To date, only two major discrepancies have been discovered and both were resolved through joint efforts of the PSRO and the hospital.

Between the PSRO and data processor, abstracts are batched in groups of 100; the 100 abstracts are in hospital order but more than one hospital's abstracts may be in an individual batch if the hospital has submitted more or less than 100 abstracts for that week. Each abstract is assigned a unique identification number composed of the Julian date and a sequential number. The batch I.D. number is logged at the PSRO. The processor's computer lists the record numbers contained under each batch I.D. number. If batch counts at the processor are less than 100, the batch control report from the processor will indicate the batch is out of balance. The Data Clerk reviews the batch control report when the processed abstracts are returned and ascertains which abstracts are missing or are numbered incorrectly. Any problems are corected by the Data Clerk.

Edit messages and corrections are not batched from the processor to the PSRO. The PSRO returns corrections to the processor in batches of 50.

Data Entry and Edit

The PSRO timeliness policy is that all abstracts must be submitted within 30 days after discharge. In practice, most hospitals submit data 30-60 days after discharge; the PSRO estimates that 70-75 percent of abstracts are received within 60 days after discharge. The primary reason for tardiness appears to be slowness in completion of the medical record by the attending physician; this accounts for approximately 60 percent of the late records. Another 30 percent of late abstracts is caused by Billing Office slowness in bill preparation (local PSRO policy requires that the abstract cannot be submitted until the bill is certified). The last ten percent is time lag in applications to the intermediaries for coverage of patients.

Exhibit E-2

QUARTERLY DISCHARGE STATISTICS

TO PSRO

HOSPITAL ____________________ DATE July 12, 1977

QUARTER April 1, 1977 TO June 30, 1977

TOTAL MEDICARE DISCHARGES	117
TOTAL MEDICAID DISCHARGES	38 + 9NB = 47
TOTAL TITLE V DISCHARGES	0

Signed ____________________

Position ____________________

Please complete and submit within 15 days following the end of each quarter to:

Carolyn Lipp, A.R.T.
PSRO Data Manager
South Carolina Medical Care Foundation
P. O. Box 21667
Columbia, South Carolina 29221

All abstracts are screened at the PSRO by the Data Clerk. (See Data Quality Control Procedures for description). If errors are detected at this point, the abstract is logged and returned to the hospital (Exhibit E-3). If no errors are detected, the abstracts are batched and submitted to the processor on a weekly basis. The abstracts are keyed and subjected to the processor's edits. Errors are recorded on a computer-generated error document. The error documents are returned to the PSRO weekly. The PSRO files and the abstract; the error document is logged out and mailed to the Review Coordinator. The Review Coordinator makes the correction directly on the error document and returns it to the PSRO, where it is logged in. The PSRO resubmits the error document to the processor. The processor enters and edits the error document in conjunction with the keyed abstract (which was held in a suspense file). If the corrected abstract passes the edits, it is merged with the data base. If not, the correction process is repeated.

Data Processing and Output Analysis

Output reports are evaluated by various management level employees in the PSRO office (i.e., Medical Director evaluates all reports pertaining to attending physician and physician advisor performance; Operations Manager evaluates all reports pertaining to Coordinator performance; Data Manager evalutes all reports pertaining to Coordinator performance; Data Manager evaluates lag analysis, error rates, length of stay, rankings, and other reports of that nature; the Executive Director screens all reports but pays close attention to the reports by pay source that are shared with the intermediaries).

Additionally, the Data Manager monitors all reports for possible variations generated by inaccurate data or processor programming errors. A report request form is completed on a monthly basis by the Data Manager and submitted to the Processor. This request indicates which reports are being requested and for what period. A copy of this request is retained and when reports are received from the processor, all reports are accounted for by comparing the reports received to what was requested.

DATA QUALITY CONTROL PROCEDURES

Data Abstracting and Recording

1. Training

All Review Coordinators from all hospitals attend an initial training session and periodic sessions thereafter. New Review Coordinators attend a one-week session that covers:

- PSRO Law (P.L. 92-603)
- Organization of the South Carolina Medical Care Foundation

Exhibit E-3

ABSTRACT ERROR SHEET

HOSPITAL ____

DATE ____

Itmes to be completed for corrected.

Please return corrected abstract with error sheet attached to the South Carolina Medical Care Foundation as soon as possible.

- Coverage issues
- Coding
- Abstract completion
- Relationship edits
- Error correction procedures
- Concurrent review
- Confidentiality

Course elements of coding, abstract completion, relationship edits, confidentiality and error correction procedures are conducted by the PSRO Data Manager, who is an Accredited Record Technician. Other elements are taught by Lead Coordinators.

Every three or four months, the PSRO holds advanced, on-going training sessions (Exhibit E-4). Attendance from hospitals is not mandatory but is strongly urged by the PSRO. Delegated hospitals may choose to send only one coordinator or all of them. In most cases, all the coordinators attend. PSRO-employed coordinators are required to attend. Advanced sessions cover:

- Unusual abstracting procedures
- Abstracting and coding retraining
- New procedures
- Discussions of error rates and lag analysis
- Questions and answers.

To supplement the training activities, procedure bulletins (Exhibit E-5) are sent out to cover special or changing procedures. The Review Coordinator is required to maintain these in a notebook.

The Review Coordinator is responsible for performing Admit Diagnosis and Procedure coding. In South Carolina, approximately one-half of the coordinators are nurses and the other half are A.R.T.'s or R.R.A.'s.

2. Ongoing Activities

The Review Coordinator applies visual edits to each abstract before it is submitted to the PSRO. These edits are those recorded in the PSRO Data Manual. Each abstract is screened for accuracy (the edits) and completeness. The Coordinator may occasionally verify

EXHIBIT E-4

SOUTH CAROLINA MEDICAL CARE FOUNDATION
P. O. BOX 11188, 3325 MEDICAL PARK RD., COLUMBIA, S. C. 29211 (803) 779-4780

AGENDA

COORDINATORS WORKSHOP
April 7, 1976
Ramada Inn

9:30 - 9:45	OPENING REMARKS Dr. Kenneth N. Owens, President South Carolina Medical Care Foundation
9:45 - 9:50	INTRODUCTION OF GUESTS AND STAFF Mr. William F. Mahon Executive Director - PSRO
9:50 - 10:15	CONDUCT OF RECONSIDERATIONS Mr. Hal M. Stone, Jr. Professional Relations Manager - PSRO
10:15 - 10:30	BREAK
10:30 - 11:00	CERTIFICATION/RECERTIFICATION Mrs. Doris Covert, R.N. Operations Manager - PSRO
11:00 - 11:45	ERROR CORRECTION REQUEST FORM Ms. Carolyn Lipp, ART Data Manager - PSRO
11:45 - 1:00	LUNCH
1:00 - 1:30	GUIDELINES FOR HEALTH CARE EVALUATION Ms. Carolyn Lipp, ART Data Manager - PSRO
1:30 - 2:00	HEALTH CARE SERVICES REVIEW Mrs. Oteria S. Marsden, R.N. PSRO Lead Program Review Coordinator
2:00 - 3:00	REVISED RS 9-74 Ms. Carolyn Lipp, ART Data Manager - PSRO
3:00 - 3:15	BREAK
3:15 - 4:00	REVIEW AND DISCUSSION

PROFESSIONAL STANDARDS REVIEW ORGANIZATION

EXHIBIT E-5

PSRO Procedure Bulletin No. 29 February 9, 1977

TO: ALL COORDINATORS

FROM: Carolyn Lipp CL
PSRO Data Manager

SUBJECT: TITLE V ABSTRACTING INSTRUCTIONS

Please abstract Title V patients as all others except for the following:

1. Field-Patient ID No. - This number will be obtained from the Authorization Sheet. Be sure to place a bar over the letter.

2. Field #5 - Pay Source - Please mark pay source 5 (Gov't). If Medicaid is paying part of the bill, then Medicaid is primary and should be the only pay source marked.

3. Field #25 - LOS Criteria - Indicate a code 4 for a crippled child and a code 5 for a maternity patient.

4. Field #32 - Sex - You will occasionally have a child that the sex has not been determined until surgery. Please delay marking the sex until after surgery and then indicate appropriate sex. Remember - surgical procedures and diagnoses that are sex specific must be compatible or you will get an error document. Watch these patients closely as you may get a hysterectomy on a male patient or a prostatectomy on a female.

5. Field #34 - Admission Source - Outpatient clinic here does not necessarily refer only to the hospital's outpatient clinic. You will be getting Title V patients directly from their outpatient clinics and these should be so indicated.

6. Field #52 - Adm. Nec. Cert. Days - Indicate all days in this space that are not acute certified days. Remember - no terminations on these patients.

7. Field #54 - Adm. Nec. Reason - Please add reason code #44 to your list - "not medically necessary - Title V". Only use this reason code for Title V patients.

If you have any questions, please let me know.

codes recorded by the Medical Records Department. An additional quality check performed by the Review Coordinator is the comparison of the abstract, work-sheet, and bill before the bill is certified for payment.

PSRO Lead Coordinators periodically review random samples of documents for quality control purposes. Such monitoring includes completeness and checking for accuracy through comparison with the abstract, medical record, and worksheet. The Data Manager refers the volume and type of errors to the Lead Coordinators as necessary. Technical assistance is then provided to that coordinator by the Lead Coordinator for that region.

The PSRO maintains two WATS lines. These are for use by Coordinators when review/abstracting problems are encountered. Abstracting problems have occasionally included diagnoses that do not appear in the code books. In these situations, the PSRO has requested code assignments from the American Medical Records Association.

The PSRO maintains a permanent "Validation Survey Team" composed of a Registered Record Administrator and a Registered Nurse. The Team visits delegated hospital semi-annually and non-delegated hospitals annually to evaluate the PSRO program functioning in each institution. In terms of data activities, the Team does not re-abstract but rather validates abstracts through comparison with the medical record and worksheet. The abstract sample is pulled on a random basis from the PSRO's files of abstracts. Sample size is approximately 10-36 discharge records and is based on the total number of Federal beneficiaries. Additionally, an equal number of inpatients are reviewed by the Team. During the visit to the hospital, the appropriate medical records and worksheets are pulled and examined. Every field on the abstract is examined: the R.R.A. reviews the data portions of the abstract while the R.N. scrutinizes the level of care and review process items.

In preparation for each visit, the Team reviews error percentage reports and lag analysis reports from the processor. Upon completion of the visit, the Team holds a single exit interview with bozh the hospital administrator and (ocasionally) the Review Coordinator(s). A written report letter is prepared describing the visits; copies are submitted to the hospital administrator, Chief of Staff, Review Coordinator and the PSRO Peer Review Committee. The Peer Review Committee reviews the letter and takes appropriate action. This action has so far consisted of resurveys after a period of time during which the hospital is to correct any deficiencies detected by the Validation Survey Team.

> Adequate data quality is a condition of delegation. If data are inaccurate and/or not timely, delegation may be removed. To date, no such action has occurred. One hospital received verbal and written warnings that its status was in jeopardy. In its efforts to remain delegated, the hospital developed one of the finest quality control systems in the State.

Forms Flow Control and Data Transfer

The on-site Validation Survey Team activities include monitoring of the integrity of abstract transfer from the hospital to the processor. The Team compares the discharge sheets maintained by the Review Coordinator with the discharge statistics for that hospital as compiled by the processor. Discrepancies are noted in the report letter and could, if sufficiently serious, generate action from the PSRO Peer Review Committee.

Data Entry and Edit

Every abstract submitted to the PSRO is screened by the Data Clerk. Screening consists of checks for completeness, accuracy, and reasonableness of concurrent review information. The Data Clerk was trained on an on-going basis by the Data Manager. The edits performed by the Data Clerk are relationship edits that specify logical relatioships between fields on the abstract. The PSRO Data Manual requires 22 relationship edits that are performed by the Data Clerk.

Data Processing and Output Analysis

Prior to subcontractor system implementation, the PSRO submitted 200 "live" abstracts to be subjected to processor edits. The error documents generated by the system were compared with the original records and appropriate changes made to the edits. Subsequent PSRO submission of a 50,000-record backlog uncovered opportunities for further refinement of the system.

In terms of monitoring, the PSRO initially scanned all error documents to catch keypunch errors. This system proved so effective that the data processor now performs the same activity prior to sending the error documents to the PSRO. The PSRO now performs sample scans for keypunch errors. Additionally, the PSRO scans profile reports and error documents to detect programming problems. In general, weekly processing is monitored through examination of reports and the Federal processor's error reports.

SUMMARY

The South Carolina Medical Care Foundation has a data quality control system that is particularly strong on the front end: Review Coordinators receive formal initial and periodic training; the PSRO communicates with the Review Coordinators about particular problems or issues through written and filed procedure bulletins and two WATS lines; the Validation Survey Team examines the quality of data activities in the hospitals on a periodic, operational basis. This system is generic in the sense that it applies to both delegated and non-delegated hospitals.

APPENDIX F

CASE STUDY
WESTERN MASSACHUSETTS
PROFESSION STANDARDS REVIEW ORGANIZATION

PREFACE

The following case study describes the data system and the data quality control program developed by the Western Massachusetts PSRO to control the collection and processing of the PHDDS and optional data elements in this PSRO area. This case represents an example of a PSRO which collects data both through an existing data collection system, and on its own data form directly from some hospitals.

We are indebted to the Western Massachusetts PSRO for its support and cooperation in this quality control endeavor, and especially to Charles Everett, Executive Director; Sister Mary of Fatima, Associate Director; Roland Malboeuf, Director of Information Systems; and Linda Maloni and Joan Nodell, Hospital Liaisons, for their time and assistance, without which preparation of this case would not have been possible.

CASE STUDY

PSRO: Western Massachusetts PSRO

PSRO PERSONNEL INVOLVED IN DATA ACTIVITIES:

Charles Everett, Executive Director
Sister Mary of Fatima, Associate Director
Roland Malboeuf, Director of Information Systems
Linda Maloni, Hospital Liaison
Bernice MacInnis, Hospital Liaison
Joan Nodell, Hospital Liaison
Paula McClay, Data Coordinator
Donna Roosevelt, Data Control/Secretary
Margaret Porter, Data Entry Operator

ENVIRONMENT:

The Western Massachusetts PSRO covers approximately one third of the western part of the State of Massachusetts, and encompasses 18 acute care hospitals, all of which are delegated for concurrent review. These hospitals discharge some 55,000 Federal patients each year. The PSRO collects data from three hospitals through the Massachusetts Hospital Association (MHA) and its UIS/CMS abstracting service; the other 15 hospitals complete the PSRO's data form and forward the forms to the PSRO. The PSRO's data processor is the Dikewood Corporation, and the PSRO uses Dikewood's on-site/on-line option, whereby data are key-entered by a PSRO employee via remote terminal.

DATA SYSTEM:

The data system developed by WMPSRO involves the integration of both tape input from the data collector and abstract data keyed directly into the computer by the PSRO. Data quality control procedures have been developed at several points in the process, and are planned at further points. A detailed flowchart of the entire data system, from the time the patient enters the hospital through the generation of output reports, has been developed and is included on the following page.

Activities Related to Data Abstracting and Recording

The documentation and abstract completion processes are quite similar among hospitals in the area. For hospitals which complete the PSRO's abstract, the information comes from the Admissions Office, and much of the abstract is completed concurrently during the patient's stay. Each Coordinator maintains a worksheet, which documents the review activities which were conducted and the decisions which were made. The Coordinator completes the abstract and performs all diagnostic and procedural coding. The same process applies in the three hospitals which collect data through MHA, except the Medical Records Department

EXHIBIT F-1

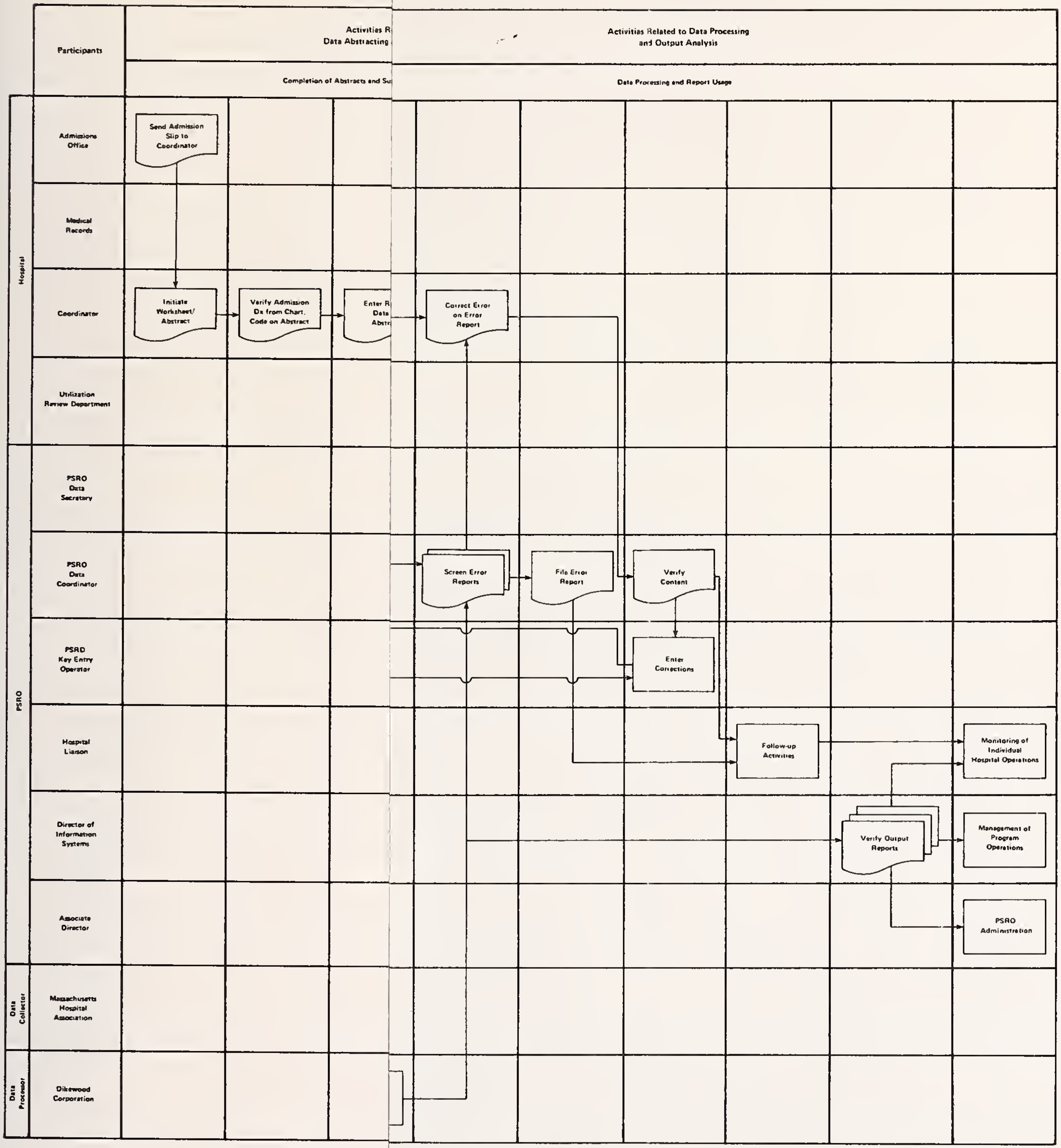
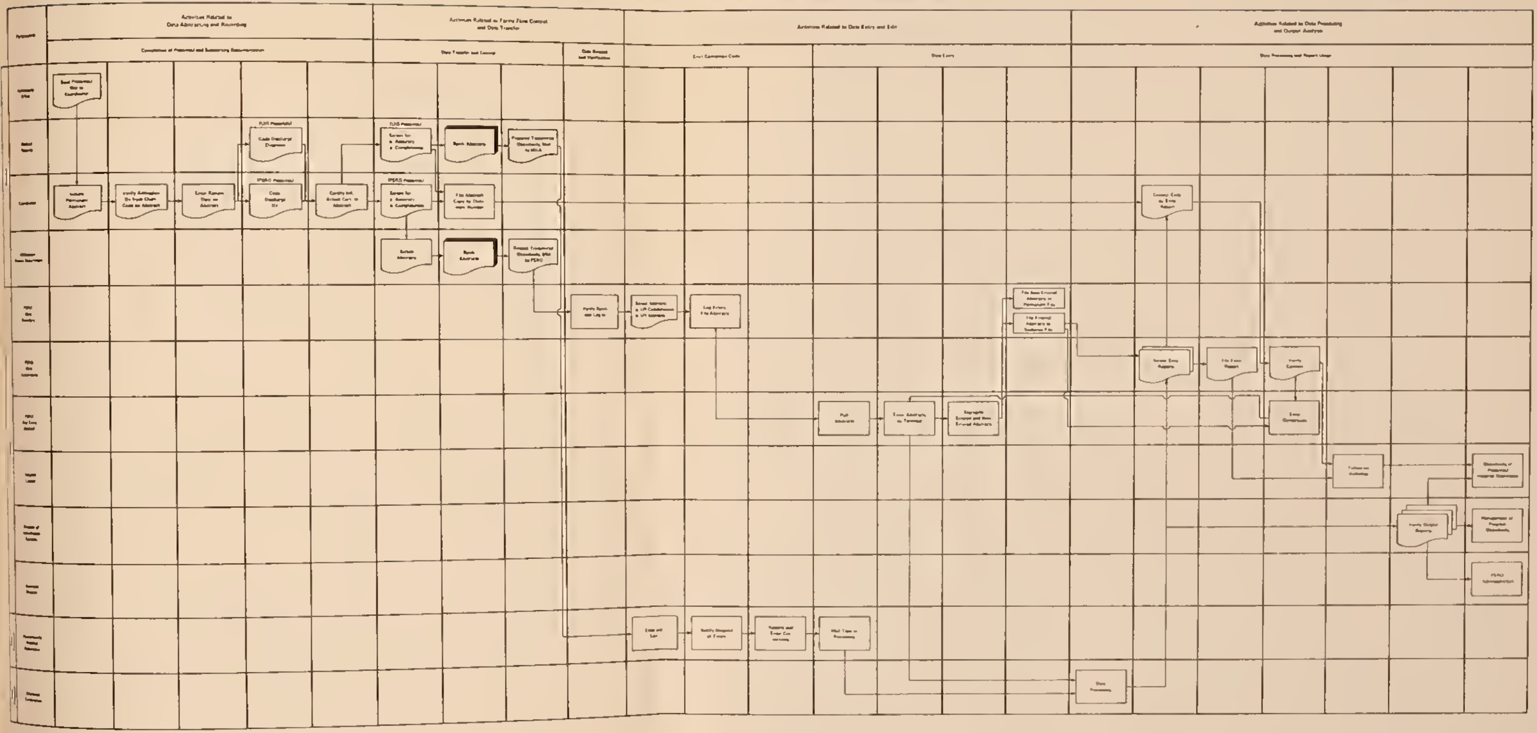

Participants
Activities R
Data Abstracting
Activities Related to Data Processing and Output Analysis
Completion of Abstracts and Su
Data Processing and Report Usage
Hospital
PSRO
Data Collector
Data Processor
Admissions Office
Medical Records
Coordinator
Utilization Review Department
PSRO Data Secretary
PSRO Data Coordinator
PSRO Key Entry Operator
Hospital Liaison
Director of Information Systems
Associate Director
Massachusetts Hospital Association
Dikewood Corporation
Send Admission Slip to Coordinator
Initiate Worksheet/ Abstract
Verify Admission Dx from Chart, Code on Abstract
Enter R Data Abstr
Correct Error on Error Report
Screen Error Reports
File Error Report
Verify Content
Enter Corrections
Follow-up Activities
Verify Output Reports
Monitoring of Individual Hospital Operations
Management of Program Operations
PSRO Administration

EXHIBIT F-1

Flow Diagram: Western Massachusetts PSRO, Inc.


Activities Related to Data Abstracting and Recording
Activities Related to Forms Flow Control and Data Transfer
Activities Related to Data Entry and Edit
Activities Related to Data Processing and Output Analysis

completes the abstract and does the coding, using review information from the Coordinator's worksheet.

Significant emphasis is placed on education, training, and monitoring. Coordinators undergo a 30-40 hour training session initially, which includes instruction in coding and abstracting. These sessions are primarily taught by the Hospital Liaison personnel, although outside personnel have been retained on occasion for coding and abstracting instruction; in the future, the PSRO intends to use the expertise of a new staff member who is an ART, although this person's primary responsibilities will be in the area of MCE studies. In addition, monthly meetings are held for all Coordinators in the area, at which various in-service continuing education activities are conducted. Written instructions concerning the performance of review activities, maintenance of Coordinator worksheets and the information which is required, and the completion of abstracts, have been prepared and distributed to all personnel. Adherence to these instructions is monitored in the hospitals on a regular basis by the Hospital Liaisons.

The manner in which diagnoses and procedures are identified and sequenced varies between hospitals. Diagnoses and procedures may be identified from the entire medical record, from the discharge summary, or by the Coordinator, based on what he/she has been monitoring. Sequencing is accomplished in a similar fashion. The PSRO is most comfortable with the determinations made by Coordinators, who have been closer to the case on a regular basis, and who have a better understanding of what has transpired. Established procedures require that questions about coding be referred to the PSRO for resolution. Questions are logged to assure consistency in responses, and are later distributed to Coordinators in the field.

Activities Related to Forms Flow Control and Data Transfer

Completed PSRO abstracts are batched in the hospital in quantities of 50 and mailed in postage prepaid envelopes to the PSRO. Each batch includes a batch header sheet which lists, by document number, each document in the batch. The hospital retains a copy of each batch header sheet. Batches are sequentially numbered, and are logged by batch number and date at both the hospital and PSRO. Hospitals are contacted immediately to resolve any discrepancies in numbers or totals of abstracts received.

The PSRO requires that abstracts be submitted within 30 days of a patient's discharge. This is monitored through the monthly submission of a Report of Outstanding Data Forms. This report identifies by discharge month the number of documents outstanding for more than 30 days and the reasons for the delay. Timely submission is met for more than 90 percent of all Federal discharges.

Hospitals which submit abstracts to MHA also batch abstracts in batches of 50. Abstracts for discharges in a given month are due within 15 days of the end of the month. Batches are sequentially numbered within month, and the last batch of the month is indicated. Batch discrepancies identified on receipt of abstracts are resolved immediately by telephone with the hospital.

Activities Related to Data Entry and Edit

Batches of abstracts which have been received are logged and scanned for blank fields and obvious abstracting errors by the PSRO. These batches are then forwarded to the key entry operator for entry into the computer. Each abstract has a pre-printed document number, and this number is keyed twice to ensure accurate entry. The operator number is written on each abstract to verify that it has been entered into the data base. If the key entry operator detects an error during data entry, whether through visual examination or from an edit message, the error is circled on the abstract and separated within the batch. The Data Control person logs the date each batch has been entered and the number of abstracts with errors. All documents are filed by hospital, by document number. Those with errors are filed in the error file, and all others are filed in the permanent file.

Bi-weekly error listings are received from Dikewood. The PSRO verifies, for each error reported, that the error was not a data entry error, and then sends one copy of the appropriate error listing to each hospital. Error corrections are required from the hospitals within three days, and this time frame is generally met. The PSRO data entry operator keys corrections directly from the error listings. At the same time, the operator visually verifies that all other information in the computer corresponds to that on the abstract which has been pulled from the error file. Once the correction has been made, the data entry operator records her initials on the abstract and forwards it to the data control person for filing into the permanent file.

Entry, edit and correction of abstracted data sent to MHA are resolved between the hospital and MHA according to previously established procedures. The PSRO requires that tape input from MHA be sent to Dikewood within 40 days after the end of a quarter. MHA informs the PSRO, by letter, of the date the tape was sent, the number of documents contained on the tape, the number of documents withheld from inclusion on the tape, and the reasons for such exclusions. Errors in MHA data detected by Dikewood's edits are resolved in exactly the same manner as errors in PSRO input, through error listings which are sent to the PSRO corrected at the hospital, and re-keyed by the PSRO key entry operator.

Activities Related to Data Processing and Output Analysis

Data received by Dikewood are edited and processed according to contractual requirements. Error listings are produced and sent to the PSRO bi-weekly. Output reports, which include reports from Dikewood's standard report set and reports designed by the PSRO, are required by specified dates on a monthly basis. Reports are sent by certified mail, return receipt requested, so Dikewood knows that PSRO has received everything sent. The PSRO compares the error listings to the exact count of abstracts entered by the PSRO and forwarded by MHA, so it knows that everything transmitted has been received. The End of Quarter Error Listing lists all documents in the computer with discharge dates in the given quarter, and these totals are checked against the totals on the output reports.

DATA QUALITY CONTROL SYSTEM:

The data quality control system developed by WMPSRO has both an on-going concurrent quality monitoring component, and a retrospective monitoring component. Several parts of each component are already in place, and others are under development or planned for future implementation.

Quality Control Activities Related to Data Abstracting and Recording

Quality control related to data collection in the hospital begins in the PSRO's training programs, and is an integral component of the Hospital Liaison function. The integrity of coding and abstracting activities is verified during routine visits to each hospital. Screening of abstracts for completeness and accuracy is usually performed by two persons (the Coordinator and the clerk, or the abstractor in the Medical Records Department) before abstracts leave the hospital. Following receipt by the PSRO, absracts are also screened manually, primarily for completeness and for validity of review data. Other editing, including that for accuracy of diagnoses and procedures, is left to the computer.

Retrospective analysis of the quality of coding and abstracting is a Hospital Liaison staff function. Once each quarter, Dikewood selects a sample of 40 records from each hospital submitting data tapes and generates a facsimile of the PSRO's abstract for each discharge. From these, the PSRO selects a sub-sample of 10 - 40 records per hospital for on-site, indepth review. For hospitals which submit data forms, the PSRO selects a sub-sample (10 - 40 records) of the sample identified by the fiscal intermediary for post-payment monitoring. The PSRO selects these records for in-depth review to minimize the effort that the hospital must expend in locating records, and to compare monitoring results by the fiscal intermediary. The hospital is notified prior to the visit, and pulls the appropriate documents for review by the Liaison personnel.

During on-site visits to hospitals which complete the PSRO's abstract, the Liaison personnel compare the abstract, Coordinator's worksheet, and Medical Record to each other, and look for any discrepancies which may exist. In those hospitals which complete MHA abstracts, the printout generated by Dikewood, Coordinator's worksheet, and medical record are compared. For each discharge, Liaison personnel complete a form containing questions about the consistency and correctness of the coding and abstracting process. Instances of isolated error, as well as patterns of recurring errors, are examined and documented.

Site visits by Liaison personnel for formal purposes are conducted at least once each month in each facility. Following each visit a report (generally written, although sometimes verbal if no areas of difficulty are found) is issued to the hospital, with copies to Administration and the U.R. chairman. General problem areas identified are raised at the next monthly Coordinator's meeting, for the benefit of all Coordinators in the PSRO area. Follow-up education programs (for Coordinators, physicians, or whomever) are arranged as indicated by the problem identified. In addition, Coordinators are re-tested once each year to assure that appropriate levels of review, coding, and abstracting skills are maintained. Efforts to assure still more uniformity in the coding and abstracting processes are under consideration.

Quality Control Activities Related to Forms Flow Control and Data Transfer

The PSRO believes that it receives abstracts for all Federal admissions. Logs of all Federal admissions are maintained by each Coordinator, and collected monthly by hospital liaison personnel. Information in these logs is compared to the number of abstracts submitted by each hospital to the PSRO Data Coordinator. In addition, all hospitals are delegated and will be reimbursed for review costs, on a per-admission basis, by the fiscal intermediary. The PSRO plans to request from the intermediary monthly figures, by hospital, on the number of admissions reported, which will serve as a further cross-check to verify that abstracts are received for all patients. The PSRO also believes that no bills are certified for payment without a corresponding abstract being prepared, and feels that the intermediary monitors the presence of certifications closely for payment purposes. Although hospital rules preclude filing a chart until it is abstracted, this is not yet stipulated in MOUs, and the PSRO cannot be positive that abstracts are submitted to the data collector for all Federal discharges. A monitoring method involving comparison of discharges reported, by month, by the data collector, against admissions billed to the fiscal intermediary, is under development.

The PSRO generally understands the information flow within each of its hospitals, and plans to document, in detail, the manner in which PSRO-related data move in each facility. This will help assure consistency in quality control procedure development, and will greatly facilitate identification of problem areas when data-related difficulties appear in any hospital.

The control procedures established for data transfer are complete where PSRO abstracts are concerned, and there are no apparent possibilities of losing documents. Both the PSRO and hospital have copies of the batch header sheets, which identify individual documents. Batches are sequentially numbered, so that if any batch is missing, this will become apparent as soon as the subsequent batch is received; the PSRO also anticipates an approximate volume of documents from each hospital in during each month. Abstracts have pre-printed document numbers, and the PSRO records the documents delivered to each hospital. Copies of abstracts are filed in the hospitals by document number and cross-referenced by patient name to facilitate location of any documents. There have been no problems with lost documents.

Where tape input is to be transferred from the data collector to the data processor, the PSRO obtains an error listing from Dikewood two weeks following receipt of such input, and currently uses this method to monitor processor receipt of tape data. The PSRO currently monitors anticipated discharge volume from each such hospital against the number of discharges reported by MHA in the tape transmittal letter which is sent to the PSRO.

Quality Control Activities Related to Data Entry and Edit

Control procedures concerning receipt, verification, and logging of data have been described above. All data on abstracts are keyed into the computer, regardless of error messages during entry (errors are circled on abstracts, and these documents are filed in a separate error file for subsequent correction), except in instances where the error prohibits entry to the file (such as an invalid hospital identifier). These errors are corrected with the assistance of the Data Coordinator, Hospital Liaisons, and hospital, if necessary, and data entry continues.

Once each month the Director of Information Systems pulls approximately 15 records from the file on a sample basis, recalls those documents onto the terminal, and compares the data in the database with the hard copy document for completeness and accuracy.

Edit listings are received from Dikewood every two weeks for all data, including input from the data collector. These reports are reviewed to identify any keying errors, and then a copy of the appropriate pages is sent to each hospital. Corrections are made on the report, and are returned to the PSRO within three days. Each error record is called onto the CRT terminal, and the appropriate corrections are made. For errors made on PSRO abstracts, the abstract is pulled from the error file, and visual verification is made that the entire record is now accurate. The abstract is then filed by hospital, by document number, in the permanent file.

Quality Control Activities Related to Data Processing and Output Analysis

The PSRO monitors closely the timeliness and quality of processor outputs, including error listings, routine reports, and tape submissions to HSQB, on a regular basis. The PSRO tested the processor's data system with a test data set consisting of 40 abstracts. The data collector also prepared a test data tape to facilitate testing of procedures to receive tape input, and to assure that there were no hardware compatibility problems. A further test was conducted with live data prior to the actual commencement of processing activities.

The PSRO has (physically) reviewed and approved the internal data flow control system of the data processor, but it does not maintain on-going quality review procedures concerning the internal operations of either the data collector or the data processor. The PSRO is currently attempting to develop procedures to verify that all abstracts transmitted and received by Dikewood are actually reflected on the output reports. This is made difficult because bi-weekly error listings (which are used to verify that all data have been received by Dikewood) are generated by date of entry, and output reports are generated by date of patient discharge. However, this difficulty does not exist with tape submitted by the data collector since information on the tape is sequenced by date of discharge. It may be possible to effect software modifications to enable counting documents entered by month of discharge.

SUMMARY

The data quality control system developed by the Western Massachusetts PSRO is generally thorough and comprehensive. Coding and abstracting procedures are generally uniform throughout the area, and the PSRO places great emphasis on the importance of these activities. The PSRO is reasonably certain that it receives data for each Federal patient discharged from its hospitals.

APPENDIX G

CASE STUDY
CALIFORNIA AREA XX PSRO

CALIFORNIA AREA XX PSRO

This case study describes the data quality program procedures being implemented by the Area XX PSRO, Sherman Oaks, California. The development of this program coincided with the commencement of review in early 1977.

We wish to express our gratitude for the cooperation received during the preparation of this document. Special thanks are due the Executive Director, Lila Marcus, the Data Manager, Paul Schmitz, and the Area XX Board of Directors and Data Committee.

INTRODUCTION

The California Area XX PSRO covers the San Fernando and Antelope Valleys of Los Angeles County. Within this area are 36 acute care facilities, ranging in size from 13 to about 500 beds, and 65 long-term care facilities. There are approximately 80,000 annual Federal patient discharges from the acute care facilities. Currently, only Medicare patients are being reviewed as a Memorandum of Understanding has not been executed with the State Medicaid Agency.

At this time, delegated review, which began in March 1977, has been implemented in 32 of the 36 hospitals. It is hoped that delegated review would be implemented in the remaining four hospitals, but there are indications that one or two may be assigned non-delegated status.

Thirty-one of the hospitals subscribe to one of the five discharge abstract systems operating in the area; one hospital has an internal system and four will complete Area XX PSRO hard copy abstracts. A copy of this abstract is shown as Exhibit I.

Each hospital uses its own review coordinator worksheet - the source for the "P" elements - but hospitals are required to collect uniform information for PSRO monitoring purposes. In addition, a Summary Review Log (as shown in Exhibit II) is completed by each hospital and forwarded to the PSRO each week. This Log is used for various purposes including:

- Review monitoring
- Review activity analyses
- HSQB/121 preparation
- Federal patient counts
- Assuring that all cases certified for billing have, in fact, been reviewed.

1. CONTROL NO.

CALIFORNIA AREA XX PSRO
DATA ABSTRACT

EXHIBIT G-1

ADMISSION/DISCHARGE INFORMATION

2. Hospital Number

3. Medical Record Number

4. Medicare Number

5. Birthdate
Month Day Year
Over 100 Years-

6. Sex: ☐ 1-Male
☐ 2-Female

7. Race: ☐ 0-Unknown
☐ 1-White
☐ 2-Black
☐ 3-Other

8. Residence
Zip Code

9. Source of Payment
☐ 03-Medicare
☐ 04-Medi-Cal
☐ 05-Title V
☐ __-Other:Specify

10. Admission Date
Month Day Year
Hour

11. Class of Admission
☐ 1-Emergency
☐ 2-Elective

12. Source of Admission
☐ 1-Routine
☐ 2-Emergency Room
☐ 3-Other Hospital (Acute)
☐ 4-SNF-ICF
☐ 5-Other Facility
☐ 6-Other

13. Discharge Date
Month Day Year

14. Disposition of Patient
☐ 01-Other Hospitals
☐ 02-SNF
☐ 03-ICF
☐ 04-Other Institution
☐ 05-Home
☐ 06-Home Health
☐ 07-LAMA
☐ 08-Died, Autopsy
☐ 09-Died, No Autopsy

15. Attending Physician

16. Operating Physician

17. Diagnosis
a. Principal
b.
c.
d.
e.

18. Procedure and Dates
a. Principal Month Day Ye
b.
c.
d.

ADMISSION CERTIFICATION INFORMATION

19 Number of Days Assigned at Admission

20. Admission Certification Process:
☐ 2-Concurrent admission review:certification granted
☐ 3-Concurrent admission review:certification denied
☐ 4-Concurrent admission review:was not performed or retrospecti

21. Basis for Assignment of Initial Length of Stay:
☐ 0-Not required
☐ 1-PSRO norms used

22. Admission Certification Level of Review:
☐ 0-Not required
☐ 1-Review Coordinator
☐ 2- Physician Advisor

CONTINUED STAY REVIEW (CSR) INFORMATION

23. Total Days Certified (Assigned)

24. Total Number of Reviews Referred to Physician

25. Total Extensions Approved

26. Total Extensions Denied

27. Unspecified: Study No: a. b. c. d. e. f. g. h.

Period__________to__________

Completed by__________

Page_____of_____Pages

ARS Init._____

					ADMISSION CERTIFICATION						CONT. STAY REV.				TOTAL DAYS CERTIFIED			RECONSIDERATION			
					DATE OF FIRST REVIEW	ADMI. CERT. PROCESS			P.A. REVIEW		REV.COORD REVIEWS		P.A. REVIEW		ASG.	PAYMENT					
NO.	MEDICAL RECORD NO	ADM. DATE	DIS. DATE	LOS		2 ✓	3 ✓	4 ✓	APR. ✓	DEN ✓	% LCR	SNF	APR. NO.	DEN. NO.	% LCR	SNF	ACUTE	ADM ✓	CSR ✓		CERT. FORM TO BILLING (Date)
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
	TOTALS	▨	▨	▨	▨															▨	▨

ADMISSION CERTIFICATION PROCESS
2 = CERTIFICATION GRANTED
3 = CERTIFICATION DENIED
4 = RETROSPECTIVE OR NOT PREFORMED

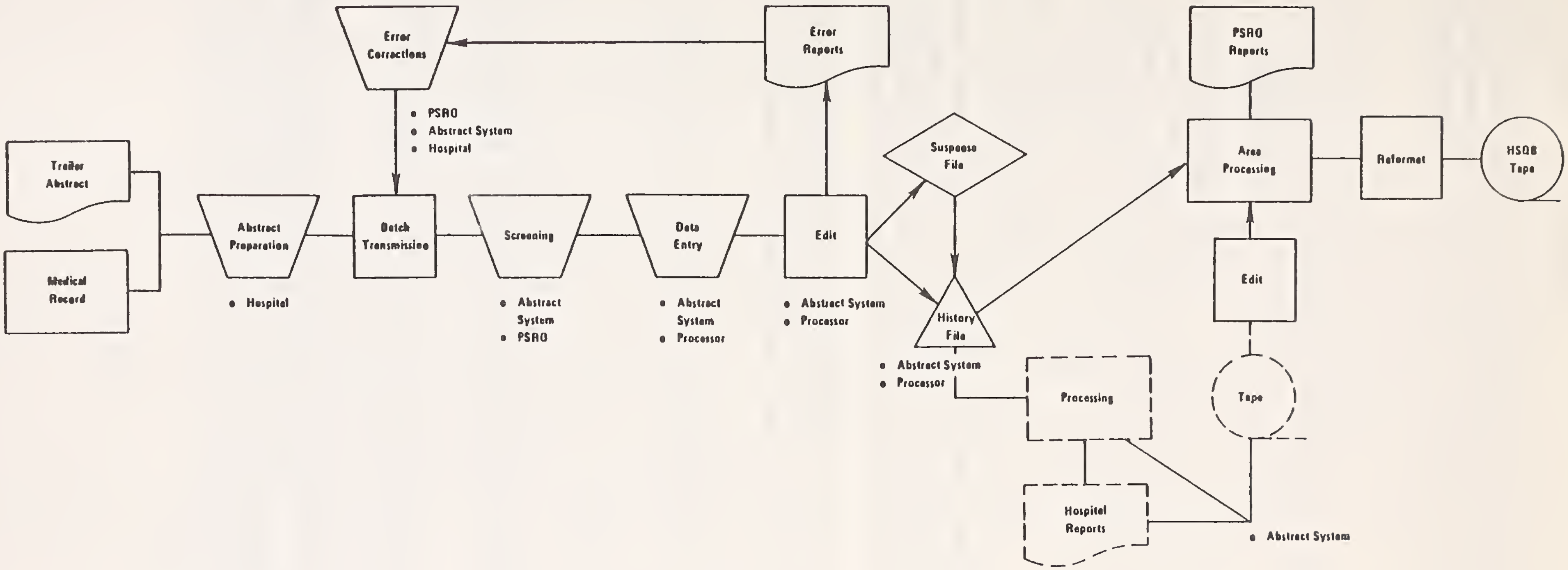
KEY: % = PERCENTILE REVIEWS
LCR = LEVEL OF CARE REVIEW
SNF = SKILLED NURSING FACILITY

EXHIBIT G-2

Rev. 3/1/78

EXHIBIT G-3

CALIFORNIA AREA XX DATA SYSTEM FLOWCHART



SYSTEM DESCRIPTION

The basic configuration of the Area XX data system is for hospitals subscribing to an abstract system and the hospital with an internal system to forward tapes directly to Dikewood Industries, the processor selected by Area XX in August 1977. Hospitals using the PSRO abstract submit these to the PSRO and, in turn, they are forwarded to the processor for entry into the data base.

In the remainder of this section, an overview of the data system is provided. A schematic of the system flow is shown in Exhibit III.

Activities Related to Data Abstracting and Recording

In almost all instances, medical records personnel are responsible for abstract preparation. A supplemental form to record the "P" elements is completed for all Federal patients by the review coordinator and forwarded to medical records where the data is transcribed onto the particular system abstract being used. This form, an example of which is shown in Exhibit IV, is tailored to each system item related to the "P" elements, and to the particular coding structure used by each system. Hence, there are seven versions of this form.

In addition, a supplemental training manual has been prepared for each system which describes the PSRO data set, its relationship to each system abstract, and the methods to be employed for reporting each data element via the system in use by the hospital.

Training in abstract preparation is provided hospital staff on an individual basis at the time review is implemented. This is discussed in more detail in later sections related to data quality control procedures.

Three approaches are employed in routing the data, once the abstracts are coded:

- The hospital with an internal system forwards a tape directly to the processor
- Abstracts are submitted to data collection systems (also referred to as abstract systems or agencies) which, in turn, forward tapes to the processor when corrections are received
- Hospitals completing the Area XX abstracts forward these to the PSRO where they are checked, batched, recorded, and sent to the processor for processing.

Activities Related to Forms Flow Control and Data Transfer

There are four aspects of forms control and data flow monitoring. Each is briefly discussed below and is elaborated upon in a later section where quality control procedures related to data flow monitoring are discussed.

- Hospital Data Submission

  Each time a hospital forwards the final batch of abstracts for a given discharge month to the abstract system, it is required to notify the PSRO. Similarly, hospitals completing Area XX hard copy abstracts indicate "final batches" when submitting these to the PSRO.

- Abstract System Data Submission

  Each month, collection systems are required to report, by hospital and discharge month, all data submitted to Dikewood during the month.

- Processor Submissions

  When tapes are forwarded from Dikewood to HSQB, a report on hospitals, months inlcuded, and volume of discharge is filed with the PSRO.

- Summary Control Log

  Based on the three types of reports described above, a Summary Control Log is prepared by the PSRO to track the data flow through the system. The Log is also used to identify delinquent reporting and verify discharge volume counts reported from various points in the system.

Activities Related to Data Entry and Edit

Because existing abstract systems are the basis for the Area XX data system, the PSRO is not directly involved in the data entry process. Due to the fact that only three optional items are being collected, the basic edits contained in Transmittal 28 and 50 are the PSRO standards. However, some collection systems to which the Area XX hospitals submit their data do use more stringent edits.

In instances where hospitals subscribe to an existing abstract system, correction of errors detected by the edit routines are handled directly between the system and the hospital. For the four hospitals using the Area XX abstract, error listings from Dikewood are forwarded to the PSRO, the corrections are obtained from the hospital, and these are resubmitted to the processor via the PSRO.

Activities Related to Data Processing and Output Analysis

Processing is undertaken using Dikewood's standard processing procedures. The one aspect of the Area XX system which is not routine for Dikewood is the multiple tape merging which is required to combine data from the various collectors and from the hospitals.

Error reports are generated on a hospital by hospital basis and forwarded to the PSRO after the processor edits the data. The initial reports were used primarily to identify editing and formatting problems at the abstract system level. Except in the case of one collection system, readily identifiable patterns were evident and the corrections have been effected. The types of problems encountered included:

- One abstract agency forwarded all Federal patient discharges for a month; however, since review by Area XX is only performed on admissions, some of the discharges, especially during the first month of review in a hospital, related to admissions of earlier months which were not reviewed.
- One abstract system only collected day and month of procedures and defaults the year by comparison of admission and discharge dates; this default did not work properly for one procedure field.
- No physician identifier was submitted on principal "non-surgical" procedure field.

Confirmation that the corrections to these problems have been made will be shown by the results of processing first quarter 1978 data.

To date, only one set of routine reports has been received by the PSRO from Dikewood because the system has been operable only since late 1977. I is anticipated that these reports will be analyzed by the PSRO's data staff, then reviewed by the PSRO Data Committee. Following this review the reports will be provided to other PSRO committees to support their activities.

DATA QUALITY CONTROL SYSTEM

The procedures to be discussed in this and following sections of the case study are the core of the Area XX data quality control program. The objectives of this program can be summarized as follows:

- To minimize the potential for data quality problems to develop
- To determine if data quality problems exist at any point in the system and, if so, where they exist
- To identify the nature of the problem
- To determine if these problems are associated with the data collection process, specific abstract agencies or personnel within these agencies
- To develop approaches for remedial or follow-up action and for provision of technical assistance to hospitals as necessary.

Approaches to satisfying these objectives are discussed in the sections which follow. The mechanisms to be described are used by the data staff to identify problem areas and to seek their resolution from the agencies involved. In those instances where resolution is not forthcoming in a timely manner, these procedures are used as the basis for reporting to the Data Committee, the general activities of which are described in the final section of this paper. It is this Committee which is responsible for instituting formal action when necessary.

Pre-Delegation Activities

Activities related to data quality control begin at the time delegation of a hospital is being considered. Prior to delegation, a survey is made of each hospital. The specific data-related issues addressed in the survey include:

- The discharge abstract system being used
- Current abstract backlog
- The coding system being used.

The survey is followed by an on-site visit by members of the PSRO Delegation Committee at which time any problems identified during the survey are discussed. For instance, if there is a significant abstract backlog which cannot be eliminated prior to the proposed implementation of PSRO review in the hospital, the PSRO may request that the hospital complete a PSRO abstract. This would assure timely and accurate completion of PSRO data until such time as the backlog has been eliminated and the hospital has demonstrated the capability to collect PSRO data in a timely manner on the hospital's abstract.

Pre-Implementation Activities

Before implementation, several data related activities are discussed with the appropriate hospital staff and include:

- In-service training related to the Review Activity Summary Log
- Preliminary training in abstracting procedures using the hospital data system manual supplemented by a PSRO training manual designed to relate to each abstract system, and a discussion of the trailer abstract used to initially record the "P" elements (Exhibit IV).
- A discussion of the flow of all data in the PSRO including:
  - Concurrent review
  - Data collection

  - Data abstracting
  - Data transmission
  - MCE study reporting
- Determination of how the review coordinator worksheet data corresponds with medical record admission and discharge data
- Discussions on confidentiality
- Requests for a data release agreement when the hospital proposes to use a discharge abstract system.

Post-Implementation Activities

Immediately following implementation, an intensive training session is held with the review coordinator and medical records personnel. It is felt that holding this session after two or three days of review experience provides a realistic framework to which hospital personnel can relate. Topics covered include:

- Intensive review of the abstract and data training manual
- Review of the trailer information
- Review of hypothetical coding situations.

At this time, a listing of all physicians and their assigned hospital identification numbers is obtained.

During a subsequent visit, a review is undertaken of the first 50 abstracts prepared. Findings are recorded on a sheet which lists, by case, the individual data elements and coding problems identified. The objectives of this screening are to verify that the appropriate data fields are filled, to review the accuracy of the abstracting, and to verify that concurrent review data is displayed for those patients reviewed.

The general findings are discussed with the staff and documented. Where necessary, additional training is performed.

Quality Control for Data Flow Monitoring

Five mechanisms are used for the data flow monitoring functions in the Area XX quality control program:

  - Hospital data submission
  - Abstract system data submission

- Processor submissions
- Summary Control Log
- Medical Record Control Index.

Each of these is described below.

- Hospital Data Submission Monitoring

  Each time a hospital submits the final batch for a discharge month, a form letter as shown in Exhibit V is sent to the PSRO. These data are entered on the Summary Control Log (discussed below). Final batches are required to be submitted within 30 days from the end of the discharge month.

- Abstract System Data Submission Monitoring

  Within 45 days of the end of the quarter, each abstract system is required to submit a report on data forwarded to Dikewood and list the discharge months by hospital. This report is shown in Exhibit VI. A refinement being , implemented is to list the actual number of discharges against each entry, in order to track the number of abstracts for each month which may have been held back due to the errors not having been resubmitted. These figures will be matched against hospital review volumes on the Summary Review Logs (Exhibit II). Currently, an estimate of corrected batches can be obtained only from those systems which withhold a complete month until all corrections are made. It is felt that the additional volume reporting will enhance the overall data flow monitoring system by identifying partial submissions being forwarded to the processor.

- Processor Submissions

  Due to the early system problems discussed above, only one tape has been forwarded to HSQB. However, it is felt that the problems have been corrected and, on future submissions, the processor will report to the PSRO the date of submission of the PHDD tapes and the volume, by hospital, for the months involved.

- Summary Control Log

  A Summary Control Log is used as the primary control document for all data flow. It is prepared by the PSRO from the inputs of hospitals, abstract systems, and the processor, as described in the preceding sections. A facsimile of this Log as it will appear with the additional volume reporting requirements is shown in Exhibit VII.

EXHIBIT G-4

TRAILER ABSTRACT

CONCURRENT REVIEW SUMMARY INFORMATION

Patient Name________________ Discharge Date____________________

Medical Record Number________

ABSTRACT FIELD NUMBERS	FIELD CODING	PSRO DATA ELEMENT DESCRIPTIONS
	/ /	Admission Certification Process 2=Concurrent admission review: certification granted 3=Concurrent admission review: certification denied 4=Concurrent admission review: retrospective
	/ / / /	Days Assigned at Admission 000 to 999
	/ /	Basis for Assignment of Initial Length of Stay 0=Not Required 1=PSRO norms used
	/ /	Admission Certification Level Review 0=Not Required 1=Review Coordinator 2=Physician Advisor
	/ /	Total Number of Reviews Referred to Physician Advisor 0 to 9
	/ / / / /	Total Number of Days Certified Assigned 0000 to 0999
	/ / /	Extension Denial 00=None 01=One or more

Note: In recording PSRO Data Element Codes it is important to begin at the right hand side. All blank spaces must be filled with zeroes, e.g., 9 Day Assigned Admission would be recorded as /0/0/9/.

EXHIBIT G-5

California Area XX
Professional Standards Review Organization
SAN FERNANDO VALLEY AND ANTELOPE VALLEY PSRO

TO: DATA MANAGER
CALIF. AREA XX PSRO
15250 VENTURA BLVD.
SUITE 810
SHERMAN OAKS, CALIF. 91403

FROM: ______________________________
HOSPITAL NAME

SUBJECT: SUBMISSION OF ABSTRACTS

Our final batch of abstracts for the month of ____________ has been mailed to our computer service on this date ______________________.

____
Medical Records Persons Name

EXHIBIT G-6

(Your letter Stationery)

To: Dikewood Industries
Attention: M. Shafi
1009 Bradbury Drive, S.E.
Albuquerque, New Mexico 87106

From: (Name of sender or person to contact)

Re: Data Tape for Area 20 PSRO 9 CA 20
Hospital Patient Discharges

The enclosed data tape contains patient discharges from hospitals in Area 20 PSRO.

Date Tape was Sent ____________________

Number of Records ____________________

Number of Reels ____________________

List of Hospital ID Number and Months Reporting on Tape

Hospital ID No. or Name	Months Reporting	Hospital ID No. or Name	Months Reporting

Please return previous submitted magnetic tape.

cc: Data Manager
California Area 20 PSRO
15250 Ventura Boulevard
Sherman Oaks, California 91403

EXHIBIT G-7

ABSTRACT MONTH
(January etc.)

HOSPITAL NAME	I.D. NUMBER	ABSTRACT SYSTEM	FINAL BATCH (Date)	TAPE TO DWI (Date)	VOLUME	TAPE TO HSQB (Date)	VOLUME
Hospital A							
Hospital B							
Hospital C etc/							
.							
.							
.							
.							

AREA XX SUMMARY CONTROL LOG

By comparing the Summary Control Log and the Summary Review Log (completed by the hospitals and shown as Exhibit II), and PSRO can identify major data flow problems including:

- Hospital abstract submission delays
- Error correction cycle delays
- Abstract system processing delays
- Processor delays
- Patient count discrepancies
- Reconciliation of patient volumes at each point in the system operations.

A check on Federal patient counts is maintained by the use of the Summary Review Log prepared by the hospital (Exhibit II). These figures are checked against abstract counts and discharges reported by the various collection agencies. The log is also used to compile the HSQB/121, and to develop other review statistics within the PSRO. A control chart which lists the submissions of each hospital by individual weeks is maintained by the PSRO to track receipt of the Logs.

- Medical Record Control Index

Currently, a Medical Record Control Index is generated by the processor when tapes are received from collection agencies. This lists by hospital and patient:

- Date of discharge
- System control number
- Medical record number.

This index has been used to verify patient counts and, where necessary, to track records which appear to be missing. With implementation of the new volume reporting procedures discussed above, use of this log may be discontinued.

Data Input Quality Control

Under the terms of the subcontract, the processor was required to conduct a system test of the data processing system. This test was designed and performed by Dikewood in October 1977.

Tests of the collection systems were not performed in the interest of time and since these systems were serving other PSROs, few problems were anticipated. In retrospect, however, such tests should have been performed. As discussed above, several problems in coding and formatting were encountered which caused about a four month delay in operationalizing the system; a test of the collector systems might have alleviated some of these problems.

As will be discussed below in the section related to data validation, checks are to be made, in the future, on key entry accuracy and reformatting integrity.

Report Monitoring Control

Several report monitoring logs are maintained to generate:

- Monthly error reports
- Monthly hospital reports
- Quarterly, semi-annual, and annual reports.

These are used to maintain the reports flows against subcontract deliverable schedules, as described below:

- Monthly Error Reports

  The monthly error reports are designed to track errors identified by the processor in editing data. The error listings were particularly important when initial problems were encountered with collection agencies. The error report log is shown in Exhibit VIII. Two types of reports are generated:

  - The first report lists, by hospital, the records found to be in error. Each is identified by date of discharge, system control number, and medical record number, with an English language error message and the associated field(s).
  - The second is a summary report, by hospital, of the total number of records received, the number in error, and a summary error analysis by error description. (The total volume reported is to be checked against the volume reported as being submitted by the abstract system and recorded on the Summary Control Log described above.)

  These reports were extremely helpful in identifying error patterns by hospital and collection agency during the initial months of system operation. A supplemental dump report, which lists by discharge all abstract data by field, also assisted in identifying data recordation, formatting, and edit problems at the various collection systems.

EXHIBIT G-8

DISCHARGE MONTH
(January etc.)

	TAPE TO DWI	ERROR LIST SCHEDULED	RESCHEDULED	RECEIVED	CORRECTIONS SUBMITTED
ABSTRACT SYSTEM "A"					
HOSPITAL 1					
HOSPITAL 2 etc.					
.					
.					
.					
ABSTRACT SYSTEM "B"					
HOSPITAL 11					
HOSPITAL 12 etc.					
.					
.					
.					

ERROR REPORT LOG

The error reports are also used for data correction purposes. Once the error has been identified, the correct entry is indicated next to the related record on the error report and then resubmitted to the processor for correction of the record. An additional use for these reports has been as a tool for retraining hospital personnel in correct abstracting procedures.

- Monthly Hospital Reports

  Certain reports from Dikewood on a hospital by hospital basis are scheduled to be produced at monthly intervals. The log used to monitor these reports is shown in Exhibit IX.

- Quarterly, Semi-Annual and Annual Reports

  For the periodic, PSRO-wide reports scheduled at quarterly and greater intervals, a log for tracking these reports lists, by report:

  - Scheduled date
  - Re-scheduled date
  - Receipt date.

Abstract Verification Quality Control Procedures

Two approaches are being taken to validate the quality of data being reported on the abstracts:

- Periodic reabstracting where a sample of abstracts previously submitted is compared to the medical record
- Analysis of reports received from the processor to identify suspicious coding patterns; this phase of the program is just being instituted, but it is considered to be a core data quality activity.

These two approaches are described below.

- Reabstracting

  Each quarter, a dump of 50 randomly selected records from each hospital as reported by the collection systems is to be received from the processor. These serve as the basis for the reabstracting sample. These are examined for such variables as:

  - Medical-surgical mix

EXHIBIT G-9

REPORT "A"
DISCHARGE MONTH
(January etc.)

HOSPITAL	SCHEDULED	RESCHEDULED	RECEIVED
1			
2			
3			
4 etc.			
:			

MONTHLY HOSPITAL REPORT LOG

- Case complexity

- Review activity volume, etc.

A final sample of about 15-25 records per hospital selected for review, the size of the sample depending on hospital size, number of abstractors, etc. The size of the sample and periodicity of reabstracting is also adjusted for other variables:

- Newly delegated hospitals - increase sample size and frequency

- Substandard past performance - increase sample size and frequency

- Good past performance - decrease frequency of reabstracting visits.

As time permits, the PSRO plans to conduct interim, less formal on-site visits, especially when changes in reporting requirements are required. Prior to the abstracting visit, the selected records, associated trailer abstracts, and coordinator worksheets are retrieved by the hospital. During the actual reabstracting, two audit trails are followed:

- The "P" elements from the worksheet to the trailer and the final abstract

- The medical record data correspondence with the reported UHDDS.

Any discrepancy between the recorded and reported data is documented on a case-by-case basis, including the nature of the discrepancy recorded by item(s) involved. The review of these discrepancies is not intended to provide a definitive statistical analysis, but rather to identify error patterns and determine their cause by discussions with the hospital personnel involved. Where necessary, technical assistance is provided by hospitals in eliminating prevalent problems.

Where significant problems are found, follow-up interim visits are planned to review abstracts being prepared at the time. In these cases, the PSRO can "walk through" the abstracting process with the record and abstract in hand. When a continuing problem is encountered, it will be referred to the Area XX Data Committee for possible hospital administration involvement in required corrective action.

In some instances, hospitals retain copies of the abstracts submitted to their collection agency. These data are then compared against the dump report to identify any keying or formatting problems at the collection agency level. This process did, in fact, identify rather serious problems with one collection agency.

A future modification will apply to hospitals where more than one abstractor is utilized. In these instances, each abstractor will be required to place some identifier on the record. By this mechanism, the reabstracting sample can be adjusted to include coding examples from all personnel.

Reports Analysis

In some of the area reports received by the PSRO, certain patterns have emerged which give some indication that there might be coding problems not being identified by the reabstracting process. Examples include:

- A high incidence of low-back pain reported as a single diagnosis
- A primary diagnosis (single) of gastroenteritis with procedures performed
- A high incidence of chronic ischemic heart disease as a primary diagnosis
- Pneumonia and bronchitis reported with procedures (chest x-rays are not codable procedures)
- Sprains and strains of the sacroiliac with procedures performed
- Closed reduction of fractures with procedures reported.

Samples of these cases will be verified for coding accuracy. Points to be looked for include:

- Coding of admitting symptoms
- Diagnosis and procedures coding errors
- Underlying conditions being reported as primary diagnoses.

This phase of the program is just beginning. These suspected problems may, in fact, be explainable in other ways; however, it is an issue felt to be worth investigation.

AREA XX DATA COMMITTEE

An important ingredient in the overall picture of system operation and data quality control at Area XX is the role of the Data Committee, composed of three physicians. They view their responsibilities as:

- Effective operation of the data system on an on-going basis
- Data support for other committees, such as the Board of Directors, Quality Assurance Committee, and Utilization Committee.

Meetings are scheduled on a monthly basis; however, if problems arise, the chairman is on call to provide support to the PSRO staff. At each meeting, formal data system status reports are reviewed as they pertain to:

- Timeliness of abstract submission to collection agencies by all hospitals compared to performance over preceding months
- Transfer of data from collection agencies to the processor
- Processor performance.

Each data collection agency is reported and discussed individually. Resultant actions have included formal and informal notification to hospitals regarding delays in abstract submission, coding problems, etc., and interaction with the processor. In one instance, a collection agency was notified that if performance was not improved within 30 days, use of its services to provide hospital data would have to be discontinued. The ability to invoke this action is based on a precaution included in memoranda of understanding with delegated hospitals which states that if a hospital chooses to submit data via a collection agency, and should this agency not conform to the PSRO requirements for data timeliness and accuracy, the PSRO reserves the right to discontinue the arrangement on 30 days notice and to require the hospital to complete a PSRO abstract.

The key to the effectiveness of the Data Committee's role is their willingness to formally act on behalf of the PSRO when staff efforts have not resulted in the desired corrective action by hospitals and/or the data collection agencies involved in the system.

APPENDIX H

CASE STUDY

SOUTHCENTRAL PENNSYLVANIA PSRO

CASE STUDY

PSRO: SOUTHCENTRAL PENNSYLVANIA PSRO

The following case study describes the data system and the data quality control program developed by the Southcentral Pennsylvania PSRO to control the collection and processing of the PHDDS and optional data elements in a system in which the data is collected entirely through existing data collection mechanisms.

We are indebted to the Southcentral Pennsylvania PSRO for its support and cooperation in this data quality control endeavor, and especially to Harold Diehl, Executive Director; Steve Keys, Manager, Data Systems; Yvonne Harbeson, Manager of Concurrent Review; Holly Hanson, Data Clerk; and Sandra Abnett, Special Projects Coordinator.

In addition, we are indebted to Arnold Spellman, Director, Project Development and Roland Loup, Manager, Quality Control Department of the Commission on Professional and Hospital Activities (CPHA); Thomas S. Powell, Executive Director, Hospital Utilization Project (HUP); and his staff, Mr. William H. Schofield; Ms. Rosalyn P. Robitoille, R.N.; Mr. Mark Dietz,R.R.A.; Ms. Meryl Hartman,A.R.T.; and Ms. Carolyn C. Petro for their time and assistance in preparing the case study.

PSRO PERSONNEL INVOLVED IN DATA ACTIVITIES:

Harold Diehl, Executive Director
Stephen Keys, Manager, Data Systems
Holly Hanson, Data Clerk
Yvonne Harbeson, Director, Hospital Relations and Utilization Review Activities
Sandra Abnet, Special Projects Coordinator

ENVIRONMENT

The Southcentral Pennsylvania PSRO encompasses an eleven-county area in the southcentral part of the state. There are twenty-nine (29) acute care hospitals in the area, all of which have been granted full delegation status. Of these twenty-nine (29) hospitals, six (6) participate in the Professional Activity Study (PAS) system of the Commission on Professional and Hospital Activities (CPHA) and twenty-three (23) participate in the Hospital Utilization Project (HUP). Since all hospitals in the PSRO area participate in either the PAS or HUP systems, the PSRO is utilizing these existing systems as the collection mechanism in its data system.

The PSRO is a member of the Penn-Del (Pennsylvania-Delaware) Data Consortium. This Consortium is comprised of seven (7) PSROs from the two (2) states that share a common framework for data activities. As a result of the Request for Proposal (RFP) issued by the Consortium members, the Hospital Utilization Project (HUP) was selected as the data processor.

DATA SYSTEM

The PSRO data system begins in the admissions office of each delegated hospital. Here, a daily listing of Federal patient admissions is prepared for the Review Coordinator.

The Review Coordinator maintains individual patient worksheets which document the concurrent review decisions made during the patient's hospital stay. Upon discharge, the Review Coordinator must summarize the individual concurrent review information so that the data can be transmitted to the medical records department and properly entered on the PAS or HUP abstract. The transmission of this information is accomplished by several methods, depending on the individual hospital. These methods include the PSRO developed "daily discharge report," (Exhibits H-1 and H-2), unique hospital worksheet or data transmittal form. In several hospitals, the Review Coordinator completes the concurrent review sections on the individual patient abstracts.

The daily discharge report provides a summarization of concurrent review information by individual patient in the same format as the corresponding concurrent review sections on the HUP and PAS abstracts. This report, which is completed by the Review Coordinator on a daily basis, is then transmitted to the medical records department which, in turn, copies the information onto the patient's abstract. Other hospitals have simply elected to reproduce the concurrent review section of the abstract onto the coordinator's worksheet. In all delegated hospitals, the medical records department completes the UHDDS elements. The final step in the concurrent review process is the completion of the PSRO "medical certification form" (Exhibit H-3) by the coordinator. This certification form, which summarizes the patient's hospital stay, indicates the presence and scope of PSRO review to the fiscal intermediaries.

Upon completion, the abstracts are screened and batched by medical records department personnel. HUP and PAS provide guidelines on batching procedures and sizes. At this time, a control number is assigned to each abstract and a log is kept as to these numbers. A batch sheet accompanies the abstracts to the data service and identifies the number of abstracts in the batch, the date of batching and the sequential numbers included in the batch. Upon receipt of a batch, both HUP and PAS also log various information pertaining to the submission. An end-of-month transmittal is enclosed with the last batch of abstracts for a month so that the data abstracting service knows the month is complete. PSRO guidelines require that abstracts be completed and submitted within thirty (30) days after discharge.

The data abstracting services, which are under contract to the PSRO as data collectors, enter the logged abstracts into the computer, after the material has been scanned or verified. Edits, as specified by the

EXHIBIT H-1

Daily Discharge Report (PAS)

___/___/___
Discharge Date

			ADMISSION CERTIFICATION (check appropriate items)						ADMISSION CERT. - REVIEW LEVEL								
Patient I.D.	Expected Payment Source		Not Reviewed (0)	Exempt (1)	Pre-Admission (2)	PSRO Norm Used (3)	In Time Required (4)		U.R. Coord. (19)	Physician Advisor (20)		Initial Days Certified (17)	Total Reviews Referred to Phys. Advisor (14)	Total Days Certified (16)	Total Extensions Denied	Total Extensions Granted (15)	

EXHIBIT H-2

Daily Discharge Report (HUP)

___/___/___
Dischage Date

												CONTINUED STAY					
Patient I.D.	Expected Payment Source		U.R. Coord. I.D. (35-1)	Phys. Advis. I.D. (35-2)		Admission Cert. - Type (35-3A)	Admission Cert. - Level Of Review (35-3B)		Initial Days Certified (35-4)	First Extension Days Certified (35-5)		Total No. Extension GTD. (35-6)	Extension Denied (35-7)	Total No. Reviews Referred To P.A. (35-8)		Total Add'l. Extension Days Cert. (35-9)	

EXHIBIT H-3

SOUTHCENTRAL PENNSYLVANIA PSRO
Medical Arts Building, Suite 201
890 Poplar Church Road
Camp Hill, PA 17011

MEDICAL CERTIFICATION FORM

Delegated Hospital ____________________ /Area IX PSRO

1. Patient: ______________________________ 2. I.D. # ______________________

3. Insurance Class: ______________________________ 4. Adm.: __________ D/C: __________

5. PSRO Termination Issued: __________ 6. Order for D/C Effective: ______________

7. Comments. ____

____

____

8. I certify that this hospital stay has had PSRO review which resulted in the following decisions:

From _____ Thru _____ # Cert. Days Used _____ LOC _____ # Non-Cert. Days _____ Note _______

From _____ Thru _____ # Cert. Days Used _____ LOC _____ # Non-Cert. Days _____ Note _______

From _____ Thru _____ # Cert. Days Used _____ LOC _____ # Non-Cert. Days _____ Note _______

From _____ Thru _____ # Cert. Days Used _____ LOC _____ # Non-Cert. Days _____ Note _______

From _____ Thru _____ # Cert. Days Used _____ LOC _____ # Non-Cert. Days _____ Note _______

9. Total Number of Certified Days Used: __________ 10. Total Number Non-Cert. Days _______

11. Please check if interim certification: ☐

____
Authorized Representative, U.R. Dept.

____
Date

contract, are performed and errors are referred back to the hospitals for correction. Once all abstracts for a time period are submitted and corrected, the collector prepares a computer tape which is then forwarded to the PSRO's data processor, HUP. HUP merges the data, performs the necessary edits and prepares the PSRO output reports and the HSQB data base tape.

A detailed flowchart of the data system, from the time the patient enters the hospital through the generation of output reports, has been developed and is included on the following page. (Exhibit H-4).

DATA QUALITY CONTROL SYSTEM

The Southcentral Pennsylvania PSRO is keenly aware of the need for having an effective data quality control program in place to ensure the accuracy and reliability of the data which are used to generate the reports and profiles upon which the PSRO bases its management decisions Incorrect identification, ordering or coding of diagnoses or procedures will cause records to be placed in wrong categories. Missing records can result in erroneous and misleading computations of length of stay rates. In order to prevent these errors that reduce the reliability of the data base, the PSRO is in the process of implementing a data quality control program, which addresses the two major aspects of data quality control: data quality assurance procedures and data quality monitoring or audit procedures.

The data quality assurance procedures are those that are built into the ongoing, daily functional activities that comprise the PSRO's data system.

The monitoring or audit procedures are those that are performed retrospectively on a periodic basis to identify problems, assess hospital compliance with specified data quality procedures and standards and verify the implementation of previously suggested corrective actions.

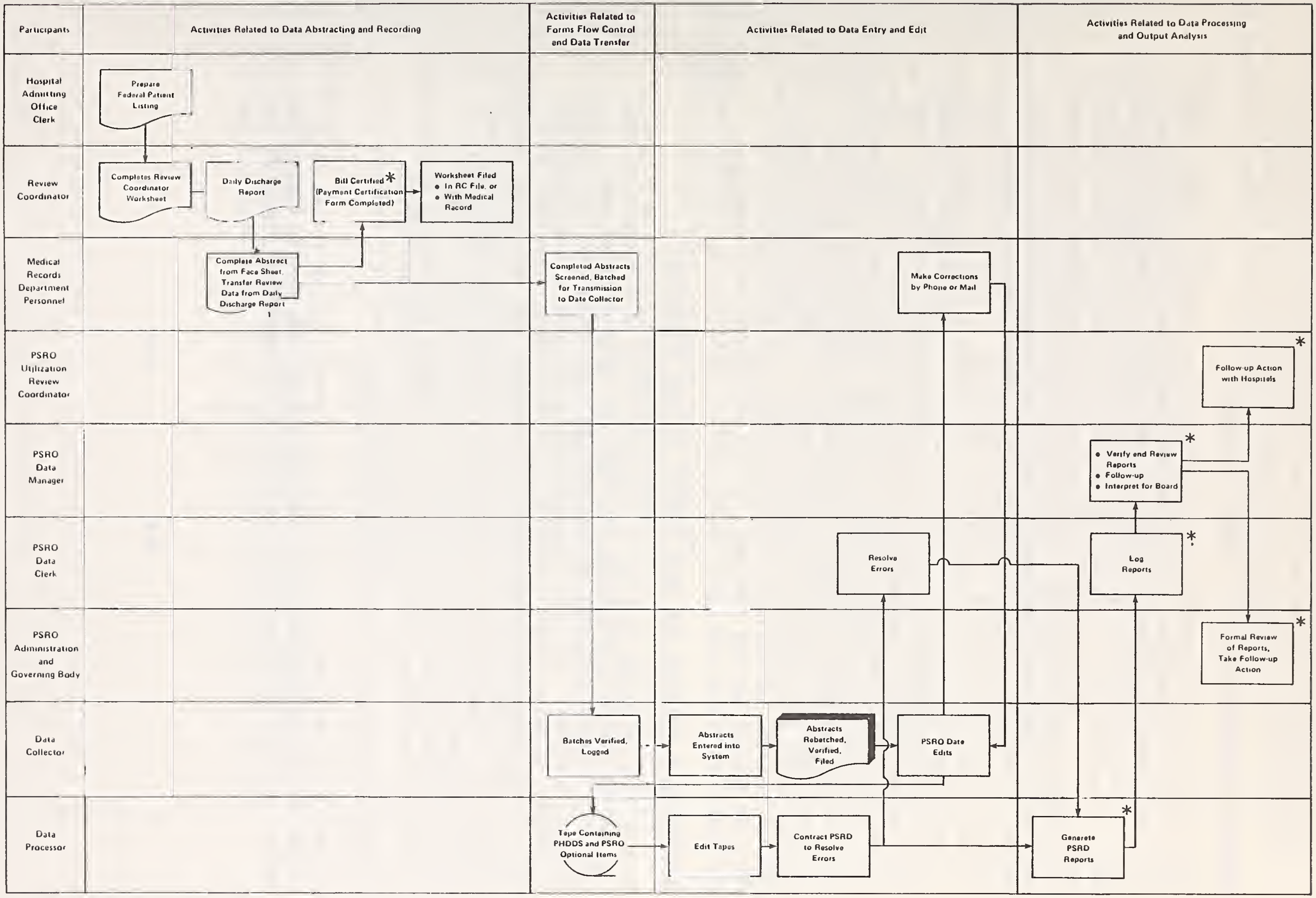
Ongoing Data Quality Assurance Procedures

The ongoing procedures that the PSRO is building into its data system are designed to prevent errors from occurring at crucial points in the system. These are:

- Identifying and reviewing all Federal patients subject to PSRO review,
- Completing an abstract for each Federal patient,
- Accurately abstracting and coding diagnostic and procedural data from the medical record,
- Forwarding the correct number of abstracts to the data collectors (CPHA and HUP) from the hospital in a timely manner,

EXHIBIT H-4

SOUTHCENTRAL PENNSYLVANIA PSRO
DATA SYSTEM FLOW DIAGRAM


Participants
Activities Related to Data Abstracting and Recording
Activities Related to Forms Flow Control and Data Transfer
Activities Related to Data Entry and Edit
Activities Related to Data Processing and Output Analysis
Hospital Admitting Office Clerk
Review Coordinator
Medical Records Department Personnel
PSRO Utilization Review Coordinator
PSRO Data Manager
PSRO Data Clerk
PSRO Administration and Governing Body
Data Collector
Data Processor
Prepare Federal Patient Listing
Completes Review Coordinator Worksheet
Daily Discharge Report
Bill Certified * (Payment Certification Form Completed)
Worksheet Filed
• In RC File, or
• With Medical Record
Complete Abstract from Face Sheet, Transfer Review Data from Daily Discharge Report 1
Completed Abstracts Screened, Batched for Transmission to Date Collector
Make Corrections by Phone or Mail
Follow-up Action with Hospitals *
• Verify and Review Reports
• Follow-up
• Interpret for Board *
Resolve Errors
Log Reports *
Formal Review of Reports, Take Follow-up Action *
Batches Verified, Logged
Abstracts Entered into System
Abstracts Rebatched, Verified, Filed
PSRO Date Edits
Tape Containing PHDDS and PSRO Optional Items
Edit Tapes
Contract PSRD to Resolve Errors
Generate PSRD Reports *

1 In Some Hospitals, the Review Coordinator Enters the Concurrent Review Date.

* To be Done

- Certifying bills for each Federal patient subject to review.
- Receiving all required reports and deliverables from the processor, HUP.

Identifying and Reviewing All Federal Patients

Federal patients are identified by the admissions office when the patient first enters the hospital. This identification is handled in the same basic way in all delegated hospitals. Upon admission, pertinent information is obtained from every patient on a hospital's unique admission sheet. Once a patient is identified as having a Federal program (Medicare, Medicaid, Title V) as an expected principal source of payment, a copy of the patient's admission sheet is forwarded to the utilization review department. This practice, combined with the UR coordinator's review of the daily admission and discharge listings, assures that all Federal patients are identified and reviewed on admission. In those cases where the admissions office feels the patient may become a Federal beneficiary, or the patient has applied for coverage under a Federal program (pending eligibles), the admission sheets are also forwarded to the UR department. These patients will be reviewed concurrently by the UR coordinator. If, in some way, a patient gets through the system without being reviewed, still another check on the system exists. The PSRO medical certification form must be completed by the UR coordinator on all Federal patients. This form accompanies the bill to the fiscal intermediary and is their indicator that the patient has had PSRO review. If the certification form is missing, the bill will be referred back to the hospital. If in fact the patient was not reviewed, the UR coordinator must perform a retrospective review and complete the medical certification form accordingly.

Completing an Abstract for each Federal Patient Discharged

As part of a delegated hospital's responsibilities with respect to data, a discharge abstract containing the PHDDS and other optional data, as specified by the PSRO, must be completed on each Federal patient discharged from the hospital. The PSRO is working with the hospitals to establish procedures to assure compliance with this requirement. One such item will be the documentation of data-flow procedures used within the hospital and the duties and functions of each department involved with the reporting of PSRO data. Admission screening and data batching procedures will also be documented, so that the PSRO can identify potential problem areas and offer suggestions. The PSRO will handle the initial instructions in this area and consult the abstracting services when appropriate.

Accurately Abstracting and Coding Discharge Data

The Review Coordinator is responsible for summarizing the review data on the Daily Discharge Reports. The reports are then transmitted to the medical records department where medical records personnel transfer the review data (in a few instances the Review Coordinator transfers the information) onto the discharge abstract and completes the UHDDS portion.

In order to assure the accuracy of the process, the following standards and ongoing procedures have been (or are being) instituted:

. Education and Training

The Review Coordinators in the hospitals receive considerable training both initially and on an on-going basis through periodic PSRO continuing education workshops.

The abstracting organizations (CPHA and HUP) provide periodic training and feedback, and continuing education relating to abstracting and coding problems at the hospital for the personnel who abstract the diagnoses and procedures from the medical records.

. Manuals and Instructions

The PSRO is responsible for assisting the hospitals in procedure development, as it relates to PSRO data, and for keeping the hospitals informed of any definition or procedure changes. By means of the PSRO administrative bulletins, the hospitals are kept updated on changes in procedures, norms, criteria, etc. The UR coordinators are required to keep these bulletins in a notebook, which is routinely screened by PSRO personnel.

. Coding Standards

Coding standards that are being instituted are:

- coding from a completed medical record,
- encouraging physicians to indicate the principal and secondary diagnoses, according to the UHDDS definition, clearly in the medical record or on the discharge summary,
- stimulating physician interest in accurate coding by involving them in setting standards (i.e., diagnoses that can never be the principal diagnosis),
- criteria for ordering diagnoses and procedures,
- instructions for handling questionable cases.

. Screening

When a hospital is granted PSRO delegated review status, copies of all Federal patient discharges are forwarded to the PSRO for a minimum of a three-month period immediately following the designation of delegated status. These abstracts are screened by PSRO data personnel for completeness, reasonableness and recurrent errors or problems. Manual concurrent review statistics are also gathered from the data. After the PSRO is comfortable with the type of data being submitted, the hospitals no longer have to submit abstract copies.

Internally, the hospitals are asked to do the same type of screening before the abstracts are batched and submitted. HUP hospitals use a glassine overlay developed for this purpose. Many errors can be identified and eliminated by this screening, and recurrent problems can be focused in on and corrective action taken.

Editing

An ongoing quality assurance procedure of the PSRO's data collection and data processing system is the system of edits. The edit routines are designed to identify errors in logic, invalid codes and fields with missing data. Error lists are compiled and sent back to the hospital for correction.

Forwarding the Correct Number of Abstracts and Data Tapes in a Timely Fashion

In order to assure that abstracts are not lost during transit and are forwarded in a timely manner from the hospital to the data collector, a formal batch control system is used. The procedures are established by the data abstracting service that the hospital participates in (HUP or PAS).

Basically, at the time of batching, the abstracts are assigned a "control" or "page" number. A batch contains sequentially numbered abstracts in a size determined by HUP or PAS. A batch cover sheet is prepared which indicates hospital identification, batch number, batch size, abstract sequence, and month and year of discharge.

Once batches are received, the data collectors log in the batch, enter the data into the computer, perform the necessary edits and prepare quarterly data tapes for the PSRO data processor.

The PSRO monitors the transfer of data tapes between the data collector and processor, and between the processor and HSQB. This is done by means of a standard transmittal which provides specific inormation about the data tapes being transferred. Included in this transmittal are number of records by hospital by month, data records withheld due to error and date of tape generation. It should be noted that since HUP is both a data collector and processor for the PSRO, such a separate distinction and transfer is artificial.

In addition to receiving status reports on the receipt of abstracts from individual hospitals, the PSRO also receives error recap reports on the types of errors being committed routinely by the individual hospitals. The PSRO uses this information to monitor the timeliness and quality of data being submitted and to resolve, when possible, delays in the submission and correction cycle.

Certifying Hospitalization for All Federal Patients

The PSRO is careful to assure that hospitalization is properly certified and that a copy of the PSRO medical certification form accompanies the bills for every Federal patient discharged from a delegated hospital. As described in the PSRO's Review Coordinator procedures, only UR coordinators or other personnel authorized by the hospital may complete the medical certification form. The fiscal intermediaries, in turn, check the signatures on these forms against a list of authorized signatures. Bills will not be processed unless a properly completed form is present.

A copy of the completed form is filed in the hospital for review by the PSRO survey team. This form is then compared against the UR coordinator worksheets for accuracy.

Receiving All Required Reports and Deliverables

In order to monitor the timeliness, quality and receipt of the output reports and other deliverables obtained from the data collectors and processor, the PSRO logs these individual performance factors. Items logged include actual date of submission, date of receipt and problems encountered, such as rejection of HSQB data tapes due to an unacceptable error rate.

To assure that all abstracts sent to the data collector and then to the processor are included on the output reports, the PSRO compares totals on the reports with those in the transmittals sent to the PSRO on a quarterly basis. As described earlier, these transmittals indicate record counts by hospital for the time periods on the data tape. The PSRO also compares these totals against the total medical certification forms submitted for a given time period.

Data Quality Audit Procedures

The data quality audit procedures conducted by Southcentral Pennsylvania PSRO are directed at detecting problems, determining the source of the problems, and instituting a course for remedial action and followup to assess improvement.

Success in carying out the data audit procedures and instituting corrective actions has been highly dependent on gaining the hospital's cooperation and interest. The PSRO, aware that it is in a key position to affect and improve the quality of hospital discharge data, has worked towards establishing an effective working relationship with the hospitals. The undertone of this relationship is a cooperative but firmly directive one aimed at efforts to improve and assure the quality of the discharge data collected.

The data quality audit procedures, which the PSRO is instituting cooperatively with the hospitals, are used to verify the following crucial aspects of data quality control:

- All Federal patients subject to PSRO review are identified and an abstract prepared.
- The discharge data are accurately abstracted and coded.
- A medical certification form is completed for each Federal patient discharge.
- The collector and processor are processing the data according to specified systems procedures and technical standards, i.e., required edits.

Various forms and reports, including several which are available from the two data collection organizations, are used to assist the PSRO in the audit process which is described in more detail below.

Verifying all Federal Patients are Identified and Abstracts are Prepared

In order to verify that all Federal patients are identified, the review coordinator checks, on a weekly basis, the worksheets that she maintains against the daily admissions and discharge lists from the admitting office. On a quarterly basis, the PSRO is planning to compare the listings available for a small additional charge from the data collectors of Federal patient abstracts against the cumulative statistics from the review coordinator's daily log. A comparison of these figures gives the PSRO an adequate approximation with which to verify that the Federal patients are being identified and abstracts are being completed and forwarded to the data collectors.

The Discharge Data are Accurately Abstracted and Coded

Three audit procedures are to be used to verify the accuracy of the data abstracted from the medical record and the coding. These are (1) re-abstracting, (2) use of the error listings from the data collectors, and (3) screening the output reports for logic and consistency.

1. Re-abstracting

   Re-abstracting is carried out as part of the PSRO's delegated hospital monitoring activity. Both review activities and data quality are audited during quarterly visits.

Being problem-oriented, the following questions are addressed during the monitoring process:

- Are the manuals containing instructions for forms completion, data flow, medical record abstracting, coding, and staff responsibility up-to-date, readily available, and being used?
- Are procedures, such as required manual screening of abstracts, being adhered to?
- Are the hospitals completing the abstracts using the same definitions for the data items, and are the definitions for the PHDDS items, the same as those specified by HSQB for Federal reporting purposes?
- Have the coders been properly trained, and do they understand the rules and procedures for coding, i.e., definitions, coding and procedures, and proper use of the tabular list and alphabetic index for accurate and complete coding.
- Are there patterns of errors which can be traced to a specific individual, i.e., a coder, a procedural deficiency, a hospital department, inadequacies in medical record documentation, etc.?
- What is the best course to correct the deficiencies uncovered?
- Have the deficiencies previously identified been corrected?

Re-abstracting Procedures

The re-abstracting process includes preparation, on-site review, analysis of findings, and followup action. These are discussed in more detail below.

Preparation

Prior to the visit, the PSRO sets up sampling criteria to be used for selecting which medical records will be used. Depending on the size of the hospital and past performance in meeting data accuracy standards, the PSRO re-abstracts between ten and thirty medical records from each hospital during the monitoring visit. The following are some of the indicators used for selecting the records:

- Error feedback reports from the data collectors which list the errors identified during the edit process,
- Review of routine statistical reports produced by the processor to determine areas of possible error, i.e., an unusually high length of stay rate or patient count for a particular diagnosis or procedure,
- Use of post-payment monitoring reports where discrepancies in certification have been indicated.

After selecting the basis for sampling, the PSRO notifies the hospital (usually the Director of the Medical Records Department) of the upcoming visit and requests the medical records, review coordinator worksheets, logs, copies of medical certification forms, copies of the abstracts, and any other relevant supporting documentation be pulled and made available to the PSRO monitoring team. In the case of hospitals using HUP for data collection, a copy of the abstract remains in the hospital and is available for the PSRO monitoring staff. The CPHA abstracting system does not leave a copy of the abstract in the hospital. There is, however, a listing produced by CPHA called the "C"-Form (Exhibit H-5) which is a print-out of all the critical information recorded on each individual abstract record. Although it represents data that has been edited and corrected, the PSRO is able to use portions of the form in lieu of the actual, original abstracts to conduct the reabstracting study.

On-site Review

Without referring to the original abstract or abstract print-out on the "C"-Form, a re-abstractor with medical records background identifies all diagnoses and procedures by examining the entire medical record. These are ordered and coded. The results are then verified against the information on the original abstract. All discrepancies in selection, ordering or coding are noted on the re-abstracting form, (Exhibit H-6). In addition, the review data on the utilization review worksheet is validated against the data on the abstract, as well as on the medical certification form.

After the monitoring visit and reabstracting process are completed, the PSRO staff meets with the review coordinators and appropriate medical records staff to discuss the preliminary findings and possible reasons for the discrepancies.

Analysis of Findings

A complete analysis of the findings is prepared at the PSRO office following the monitoring visit. This report summarizes the findings of the reabstracting study, including the specific discrepancies, the probable reasons for the discrepancies (i.e., judgmental errors, coding from inadequate discharge summaries, misuse of the tabular indices, etc.), and the recommendations for corrective actions. The PSRO forwards a copy of the report analyzing the findings to each respective hospital.

A discrepancy summary form (Exhibit H-7) will be maintained for each hospital. It will provide the PSRO with information on each hospital's progress in data quality assurance over time.

EXHIBIT H-5

CPHA

PAS & MAP C

PAGE 7 MA 4 1974 DIAGNOSIS LISTING SAMPL HOSPITAL REF 7201 SAMPLE CITY, STAT 8599

Indexed Diagnosis	More	Other Diagnoses and Operations	Indexed Operation	Oper Data	Phys or Surg	Consultations	Age	Sex	Discharge Status	Hospital Service	Stay/Payment	Line	Patient Number	Selected Case	Special	Investigation: Admission	Hemat / Serology	Chemistry	Micro	X-Ray	Management	Drugs
ACUTE MYOCARDIAL INFARCT (CONT.)												1										
4109		2500			655		46	M	T	10	3E	2	83663	X		14 9A730 4	3 S	PR++EFT++K		AC		DCI
												3	8*									
OTHER ISCHEMIC HEART												4										
4110	D	4129 4130 2500 5515	984		102		81	M		10	6B	5	83939			R15 7 510 6	CI S	-NC-F-PLR		A3	F	5
4110		4161 7903			108		70	F		10	95	6	83862		KM	46 9 61<0 7	CI S	SN + R		C	F	DCS T
4129		4130 2770	924		104		42	F		10	94	7	83198	X		R13 7 52<158	CI5S	S-C-F-PLR		AC7	FOC4M	T
4129	D	4299 7709 4279 976	984		104	V	75	F		10	16B	8	83225		LM	11 6A61<0F6	CI S	SNC-F++L7		A3		D5
4129	D	4279 4110 4130 5321			104		87	M		10	150	9	83247		JM	1111 62<056	CI5S	S+ E + 5		C	F5C6M	DC T
4129	D	4290 4120 4130 4279			104		51	F		10	124	10	83859			R12 7 41<075	CI5S	PRN E - R		C	F C2M	A T
4129	D	4110 4402 8421 9160			107	O	53	M		10	105	11	83510			14 8 610154	CISS	G--CEFTP-RT	U	A55		
4129		4120 4130 2722	984		108		69	M		10	8C	12	83848			15 8 521 R4	CI S	--CE-+PLK		A37		C T
4129		4130 4279 7828 4370			668		87	M		10	50	13	83553			R 9 8 71<2 5	CI S	RNCE+RPLR		AR	FO	DC
												14	9*									
OTHER HEART DISEASE												15										
4161	D	7472 Y595 7492 7599			107		30	F		10	72	16	83594			R14 8 31<0 5	CI S	--CEF-PLRT		ARU	C2M	C T
4163		4279 4129 4370			108		66	F		10	9B	17	83592		LM	15 7 6401F8	CI S	S+ + + R		C	F C3M	3C T
4201		4860 4279 4129			108		68	M		10	90	18	83895	X		R 41<0 6	S	-+++F-++K		AR		DCSA
4260		4920 4370			108		73	F		10	13C	19	83239	X	JM	R13 7 5101F1	CI	--C-F+++K		AC	F5	DC
4262		4920 2500			107		64	M		10	152	20	83304	X		R1114S61<0 3	CI	RN K		5	FI	DC5A
4271		4279 4340			655		80	M		10	29C	21	83066			513 7 7401 5	CI5S	RRC-FRPLR		A5	FOC5M	D7IA
4279		4129 3980 4370			107		80	M	D	10	40	22	83543		JM	1316A41<1F3	CI S	+R R		C	F5	UD5
4279		2859 1530 6000			108		85	M		30	20B	23	83408	X	KM	R 5 8 21<1 4	CI	+ + - R	U	R	6F	UDC A
4279		4129 5719 2500			108		75	M		10	14E	24	83611		KM	11 6 72<0R7	CI S	S+ - + R		C		DCA
4279	D	4129 4104 4120 4370			108		75	F		10	130	25	83791	X		R14 8 53<2 7R	CI	+N - R		C	O	DC AT
4279	D	7807 5110 5859 976	996		651		74	M	T	10	90	26	83854	X		11 8 950 R	CI	PSRC--+-RK	36	AR	O	D5S T
4279		4129 6961			652		83	F		10	6B	27	83585			R13 7 63<07WR	CI3S	S+CEFT+-K		CAR	O	D5 T
												28	12*									
CNS VASCULAR DISEASE												29										
4320	S	4449 2500 976 996	990	224	*501		70	M		56	26C	30	83415			17 9 41<4R	CIPS	P-+CRFTPL3		A5U1	FII5	3AA
4350		4370 4129 4163	996		102		70	M		10	5C	31	83407	X		R1510 520156	CI	PS+CEF-PL3		A5		C
4360		4402 3749 4010	996		107		82	F		10	8B	32	83263	X		12 5 61<0 3R	CISS	-RCEF++-3T	U	AC		5
4360		4580 2500 3959 5995			108		76	M		10	11B	33	83640	X	KM	R1315 31<2R2	CI	RRCR++P+R	U. A	AC	F	AA
4360		4409 4010 4370 5289	976		112		79	F		10	160	34	83336			14 5 73<0 5R	CI S	S+C-FTPLKT		AC		V
4361		4500 3099 976	996		110		73	M		10	17B	35	83613	X		R11 6 511 F3R	CI5	--RF++L3	RU	A5	F U	V T
4370		4100 4279 4402			102		71	M		10	18B	36	83486		LM	R14 8 75<0 6	CIPS	-+C-FRP R		AC	C3M	D7
												37	7*									
ARTERIAL DISEASE												38										
4409	D	4129 4290 4163 3049			110		76	F	I	10	270	39	83267	X	K6	R16 9X41<1F3R	CIP	-RCR+R+ 5		AR	FO	DC AT
4413	B	4010 4129 4120 385	991	289	*107	M	75	M		40	54B	40	82491	X		X73<255R	CI	SRC-FT-L5T		A5	F5I8U	D5 AT
4459		9995			755		1	F		2	77	41	83552	X		R12 8 24 W	CI	RN+EF+-+	3CA	AC		A
												42										

Form 110 74

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EXHIBIT H-6

Hospital ______________

Date __________

Patient Medical Record No.

____

SOUTHCENTRAL PENNSYLVANIA

PSRO

RE-ABSTRACTING FORM

Data Item (1)	Re-abstracting Coding (2)	Do abstract and re-abstract agree? (3)	Reasons for Discrepancies (4)

Admission Date			// Clerical
			// Completeness
			// Procedural

Discharge Date			// Clerical
			// Completeness
			// Procedural

Principal Diagnosis
Secondary Diagnoses
	Narrative ______________
	______________
	Code ______________
	1. Narrative ______________
	______________
	Code ______________
	2. Narrative ______________
	______________
	Code ______________
	3. Narrative ______________
	______________
	Code ______________
	4. Narrative ______________
	______________
	Code ______________
			// Ordering procedural-Abstract Service
			// Ordering procedural-hospital
			// Ordering Judgment
			// Ordering other __________
			______________
			// Coding procedure
			// Coding judgment
			// Coding other __________
			______________

Principal Procedure
Secondary Procedures
	Narrative ______________
	______________
	Code ______________
	1. Narrative ______________
	______________
	Code ______________
	2. Narrative ______________
	______________
	Code ______________
	3. Narrative ______________
	______________
	Code ______________
			// Ordering procedural-Abstract Service
			// Ordering procedural-hospital
			// Ordering judgment
			// Ordering other __________
			______________
			// Coding procedure
			// Coding judgment
			// Coding other __________
			______________

Any other data items that the PSRO wants to audit, or perhaps all items.			

EXHIBIT H-7

HOSPITAL ____________________

SOUTHCENTRAL PENNSYLVANIA PSRO
RE-ABSTRACTING
DISCREPANCY SUMMARY

Data Item	Time Period ________ Number Abstracted ____ Discrepancies No. %	Time Period ________ Number Abstracted ____ Discrepancies No. %	Time Period ________ Number Abstracted ____ Discrepancies No. %	Time Period ________ Number Abstracted ____ Discrepancies No. %
Admission Date				
Discharge Date				
Principal Diagnosis				
Secondary Diagnosis				
Principal Procedure				
Secondary Procedures				
Payment Status				

Followup Action

The followup action depends on the problem areas uncovered in the re-abstracting study. It may include any or all of the following:

- Requiring hospitals to update and standarize manuals and procedures (i.e. requiring the use of a uniform PSRO-specified definition for an item.)
- Increased training and technical assistance through PSRO sponsored workshops and use of available training and technical assistance resources from the collection organizations, CPHA and HUP.
- In instances where errors are traced back to individual coders, intensive education or retraining of that individual.
- Ecouraging physicians to use more care in completing the medical records and involving them in analyzing the output reports from the system, i.e., the profiles, thereby motivating them to improve the quality of the discharge data abstracted from the medical record.
- Informal periodic on-site visits to monitor the hospitals implementation of corrective actions.

In addition to the reabstracting efforts the PSRO also has access, with the hospital's permission, to the results of coding audits performed periodically by HUP.

2. Error Listings

In addition to reabstracting, the PSRO obtains error recap reports on a quarterly basis which identify recurring errors by individual hospital. Although no actual case numbers or identifiers other than the hospital identification are provided, the information is enough to suggest corrective actions.

3. Reviewing Output Reports

The output reports obtained from the processor are reviewed for logic and consistency. Often error patterns can be identified by comparing those reports with specified criteria and parameters. For example, the usual number of Title 19 discharges from a particular hospital is known to the PSRO. When the number on the output report differs significantly from the expected number, the PSRO uses that as an indicator of possible error to be investigated further.

Abstracts are Collected and Processed in a Timely Manner

A third aspect of data quality which the PSRO's audit procedures address is timeliness. The PSRO requires the hospital to complete and forward the abstracts on each Federal discharge to the data collector within 30 days of discharge. The magnetic tapes containing the edited PHDDS must be forwarded by the collectors to the processor within a sufficient amount of time to assure that the PHDDS magnetic tape can be processed and submitted to HSQB within the required 60 day time limit. In order to monitor timeliness, the PSRO receives a monthly status report from the data collectors which shows by hospital the status of input, the status of previously indentified errors awaiting correction, and the last month processed (i.e., the last entirely error-free month). When problems in timely submission become evident, the PSRO contacts the hospitals in order to further investigate the exact causes for delays and assists in recommending and implementing corrective actions.

Medical Certification Form is Completed for Each Federal Discharge

Timeliness and accuracy of bill certification are monitored during the quarterly monitoring visits. Procedures and supporting documentation are checked. Copies of claims sent to the payment agencies are randomly reviewed to verify PSRO review coordinator certification. The numbers of claims submitted by the hospitals are also verified against the Review Coordinator's daily discharge logs. Descrepancies and problem areas noted are discussed with the hospital and corrective action initiated as necessary.

The Data are being Processed According to Specified Systems Procedures

A final aspect of data quality which the PSRO audits involves the reliability of the actual data collection and processing systems, including the accuracy of inputting and processing the data and adherence to technical standards, such as required edits. There are three components to verify the quality of the systems procedures of the data collector and processor: the HSQB and other PSRO specified edits, the initial systems test, and periodic system's quality test. These are described in more detail below.

The HSQB and Other PSRO Specified Edits

The HSQB prescribed logic edits are a valuable aid to the PSRO for identifying problems or insufficient or inadequate edit routines in the collector's or processor's systems. Data tapes submitted to HSQB which do not pass the edits specified in Transmittals 28, 50 and subsequent updates are a clear indicator of problems in the system which the PSRO investigates and resolves as quickly as possible. Examination of error listings and reports from the collectors and processors are also used to identify any processing or edit difficulties that need to be addressed. For example, an incorrect edit may be identified which is responsible for the system rejecting correct records.

Initial Systems Test

The PSRO is planning on using the HSQB Test Package, which is a set of dummy abstracts containing known errors, to test the integrity of the system. By entering and processing these abstracts through the entire system, and analyzing the error reports generated, the PSRO will be able to assess whether the system is working according to specifications and if the specified edits are in place and are adequately screening the coding and logic errors in the dummy abstracts.

Periodic Systems Quality Testing

In addition to the initial systems test, the PSRO plans to perform periodic systems tests to check the ongoing quality of the collector's and processor's systems. These tests are similar to the initial systems test but are performed on a smaller scale. They will be very useful in detecting problems and ensuring that all requested modifications to the system have been implemented.

Summary

Although Southcentral PSRO obtains its data through existing data collection systems, the PSRO is fully aware of its responsibility to assure the quality of the discharge data collected and processed.

To meet this responsibility, the PSRO, with the cooperation of the hospitals and the data collector and data processor, has begun to institute ongoing procedures that are part of the routine data system activities to assure the quality of the data and audit procedures which are performed retrospectively to verify the reliability of the data.

Recognizing that without high quality data the decisions that affect the management, organization and professional activities of the program will be inadequate and incomplete, the PSRO will continue enforcing and refining its data quality program.

APPENDIX I

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BIBLIOGRAPHY

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